

LIBERTY UTILITIES
DEMAND FORECAST SUPPORTING MATERIAL
MODELS AND REGRESSION RESULTS

Modeling Results
Liberty Utilities
Residential Heating Sales Customers

Dependent Variable: RHS_CUS
Method AutoReg
Observations 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
HH_1	1.00	56.77	16.50	3.44	0.00
DT	1.00	2.59	0.32	8.20	0.00
dm1	1.00	2,150.21	449.38	4.78	0.00
dm2	1.00	1,329.77	405.31	3.28	0.00
dm4	1.00	759.42	318.74	2.38	0.02
dm10	1.00	(1,318.65)	318.80	(4.14)	0.00
dm12	1.00	1,864.60	397.61	4.69	0.00
AR1	1.00	(0.73)	0.09	(8.22)	0.00
AR3	1.00	0.47	0.10	4.60	0.00
AR5	1.00	(0.35)	0.13	(2.72)	0.01
AR6	1.00	0.41	0.12	3.51	0.00

Model Fitness:

Regress R-Square	0.9998
Total R-Square	0.9999
SSE	59,086,089.39
MSE	844,086.99
SBC	1,373.76
MAE	652.96
MAPE	0.90
Durbin-Watson	2.02
Root MSE	918.74
AIC	1,347.42
AICC	1,351.25
HQC	1,357.99

Modeling Results
Liberty Utilities
Residential Heating Sales Customers

Actual, Projected, Residual					Rolling 12-Month			Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	DT	HH_1
Aug-10	70,267	68,744	1,523	2.22%	1.74			18,475	367
Sep-10	68,381	69,780	(1,399)	-2.01%	(1.60)			18,506	367
Oct-10	67,612	66,873	738	1.10%	0.84			18,536	368
Nov-10	68,791	68,581	210	0.31%	0.24			18,567	368
Dec-10	70,386	71,043	(657)	-0.92%	(0.75)			18,597	368
Jan-11	71,148	71,046	102	0.14%	0.12			18,628	369
Feb-11	70,334	69,820	514	0.74%	0.59			18,659	369
Mar-11	70,407	69,663	743	1.07%	0.85			18,687	369
Apr-11	71,150	71,037	113	0.16%	0.13			18,718	370
May-11	70,984	70,306	678	0.96%	0.78			18,748	370
Jun-11	71,029	70,442	587	0.83%	0.67			18,779	371
Jul-11	70,631	70,365	266	0.38%	0.30	70,093	69,808	18,809	371
Aug-11	70,678	70,371	307	0.44%	0.35	70,128	69,944	18,840	371
Sep-11	69,550	69,876	(327)	-0.47%	(0.37)	70,225	69,952	18,871	372
Oct-11	69,465	68,207	1,257	1.84%	1.44	70,379	70,063	18,901	372
Nov-11	70,124	70,258	(134)	-0.19%	(0.15)	70,490	70,203	18,932	372
Dec-11	71,682	72,084	(402)	-0.56%	(0.46)	70,598	70,290	18,962	372
Jan-12	71,139	71,824	(685)	-0.95%	(0.78)	70,598	70,354	18,993	373
Feb-12	71,659	70,364	1,295	1.84%	1.48	70,708	70,400	19,024	373
Mar-12	71,210	71,128	82	0.12%	0.09	70,775	70,522	19,053	373
Apr-12	72,351	72,256	95	0.13%	0.11	70,875	70,623	19,084	373
May-12	72,223	71,386	837	1.17%	0.96	70,978	70,713	19,114	373
Jun-12	71,342	71,343	(1)	0.00%	(0.00)	71,004	70,789	19,145	374
Jul-12	71,888	71,403	484	0.68%	0.55	71,109	70,875	19,175	374
Aug-12	70,954	71,340	(387)	-0.54%	(0.44)	71,132	70,956	19,206	374
Sep-12	70,341	70,910	(569)	-0.80%	(0.65)	71,198	71,042	19,237	374
Oct-12	68,237	69,022	(785)	-1.14%	(0.90)	71,096	71,110	19,267	374
Nov-12	69,611	69,705	(94)	-0.13%	(0.11)	71,053	71,064	19,298	375
Dec-12	72,408	72,524	(116)	-0.16%	(0.13)	71,114	71,101	19,328	375
Jan-13	73,677	73,380	297	0.41%	0.34	71,325	71,230	19,359	375
Feb-13	72,383	73,497	(1,114)	-1.52%	(1.27)	71,386	71,491	19,390	375
Mar-13	70,819	71,427	(608)	-0.85%	(0.69)	71,353	71,516	19,418	376
Apr-13	72,311	71,978	333	0.46%	0.38	71,350	71,493	19,449	376
May-13	72,641	72,356	285	0.39%	0.33	71,384	71,574	19,479	376
Jun-13	72,521	73,297	(777)	-1.06%	(0.89)	71,483	71,737	19,510	376
Jul-13	71,859	72,368	(510)	-0.70%	(0.58)	71,480	71,817	19,540	377
Aug-13	72,319	71,568	751	1.05%	0.86	71,594	71,836	19,571	377
Sep-13	70,661	72,391	(1,730)	-2.39%	(1.98)	71,621	71,959	19,602	377
Oct-13	69,749	70,322	(573)	-0.81%	(0.66)	71,747	72,068	19,632	378
Nov-13	71,181	71,312	(131)	-0.18%	(0.15)	71,877	72,202	19,663	378
Dec-13	74,782	73,929	853	1.15%	0.98	72,075	72,319	19,693	378
Jan-14	74,841	75,810	(969)	-1.28%	(1.11)	72,172	72,521	19,724	379
Feb-14	71,548	74,077	(2,528)	-3.41%	(2.89)	72,103	72,570	19,755	379
Mar-14	71,614	71,022	592	0.83%	0.68	72,169	72,536	19,783	379
Apr-14	73,896	72,865	1,031	1.41%	1.18	72,301	72,610	19,814	380
May-14	76,243	75,019	1,224	1.63%	1.40	72,601	72,832	19,844	380
Jun-14	73,822	75,923	(2,101)	-2.77%	(2.40)	72,710	73,050	19,875	380
Jul-14	72,800	72,735	64	0.09%	0.07	72,788	73,081	19,905	381
Aug-14	70,013	72,126	(2,113)	-2.93%	(2.42)	72,596	73,128	19,936	381
Sep-14	68,915	71,251	(2,337)	-3.28%	(2.67)	72,450	73,033	19,967	381
Oct-14	69,300	70,144	(843)	-1.20%	(0.96)	72,413	73,018	19,997	381
Nov-14	71,531	71,955	(424)	-0.59%	(0.49)	72,442	73,071	20,028	382
Dec-14	76,923	75,714	1,210	1.60%	1.38	72,620	73,220	20,058	382
Jan-15	75,939	77,302	(1,363)	-1.76%	(1.56)	72,712	73,344	20,089	382
Feb-15	77,304	75,960	1,344	1.77%	1.54	73,192	73,501	20,120	382
Mar-15	75,632	75,699	(67)	-0.09%	(0.08)	73,526	73,891	20,148	382
Apr-15	76,604	76,495	109	0.14%	0.12	73,752	74,194	20,179	382
May-15	76,422	75,804	617	0.81%	0.71	73,767	74,259	20,209	383
Jun-15	75,860	74,551	1,309	1.76%	1.50	73,937	74,145	20,240	383
Jul-15	75,559	75,400	158	0.21%	0.18	74,167	74,367	20,270	383
Aug-15	75,055	73,959	1,096	1.48%	1.25	74,587	74,520	20,301	383
Sep-15	73,326	74,134	(808)	-1.09%	(0.92)	74,955	74,760	20,332	383
Oct-15	72,492	71,870	623	0.87%	0.71	75,221	74,904	20,362	383
Nov-15	73,279	73,411	(133)	-0.18%	(0.15)	75,366	75,025	20,393	383
Dec-15	76,312	75,886	427	0.56%	0.49	75,315	75,039	20,423	383
Jan-16	77,304	76,815	489	0.64%	0.56	75,429	74,999	20,454	383
Feb-16	76,281	76,427	(145)	-0.19%	(0.17)	75,344	75,038	20,485	383
Mar-16	75,849	75,348	501	0.67%	0.57	75,362	75,008	20,514	383
Apr-16	75,933	76,117	(184)	-0.24%	(0.21)	75,306	74,977	20,545	383
May-16	76,963	75,655	1,308	1.73%	1.50	75,351	74,964	20,575	383
Jun-16	76,810	76,378	432	0.57%	0.49	75,430	75,117	20,606	384
Jul-16	76,248	76,285	(38)	-0.05%	(0.04)	75,488	75,190	20,636	384
Aug-16	75,255	75,508	(252)	-0.33%	(0.29)	75,504	75,319	20,667	384
Sep-16	74,287	74,312	(25)	-0.03%	(0.03)	75,585	75,334	20,698	384
Oct-16	73,928	73,523	405	0.55%	0.46	75,704	75,472	20,728	384
Nov-16	75,872	75,288	583	0.77%	0.67	75,920	75,629	20,759	384
Dec-16	76,651	77,999	(1,348)	-1.73%	(1.54)	75,948	75,805	20,789	384
Jan-17	77,636	76,995	641	0.83%	0.73	75,976	75,820	20,820	385

Modeling Results
Liberty Utilities
Residential Heating Sales Customers

<u>Actual, Projected, Residual</u>					<u>Standard</u>		Rolling 12-Month		<u>Independent Variable</u>	
<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>Project Error %</u>	<u>Residual</u>	<u>Residual</u>	<u>Actual R12</u>	<u>Projected R12</u>	<u>DT</u>	<u>HH_1</u>
Feb-17	76,484	76,537	(53)	-0.07%	(0.06)	75,993	75,829	20,851	385	
Mar-17	76,711	76,275	436	0.57%	0.50	76,065	75,906	20,879	385	
Apr-17	77,606	77,750	(144)	-0.19%	(0.16)	76,204	76,042	20,910	385	
May-17		76,678					76,127	20,940	386	
Jun-17		76,594					76,145	20,971	386	
Jul-17		76,136					76,133	21,001	386	
Aug-17		76,643					76,228	21,032	387	
Sep-17		76,533					76,413	21,063	387	
Oct-17		75,306					76,561	21,093	387	
Nov-17		76,572					76,668	21,124	387	
Dec-17		78,398					76,701	21,154	388	
Jan-18		79,056					76,873	21,185	388	
Feb-18		78,363					77,025	21,216	388	
Mar-18		77,290					77,110	21,244	389	
Apr-18		78,089					77,138	21,275	389	
May-18		77,382					77,197	21,305	389	
Jun-18		77,522					77,274	21,336	389	
Jul-18		77,570					77,394	21,366	390	
Aug-18		77,699					77,482	21,397	390	
Sep-18		77,709					77,580	21,428	390	
Oct-18		76,451					77,675	21,458	390	
Nov-18		77,857					77,782	21,489	391	
Dec-18		79,815					77,900	21,519	391	
Jan-19		80,241					77,999	21,550	391	
Feb-19		79,508					78,094	21,581	391	
Mar-19		78,283					78,177	21,609	392	
Apr-19		79,139					78,265	21,640	392	
May-19		78,479					78,356	21,670	392	
Jun-19		78,587					78,445	21,701	392	
Jul-19		78,665					78,536	21,731	393	
Aug-19		78,755					78,624	21,762	393	
Sep-19		78,833					78,718	21,793	393	
Oct-19		77,602					78,814	21,823	393	
Nov-19		79,015					78,910	21,854	394	
Dec-19		80,969					79,006	21,884	394	
Jan-20		81,352					79,099	21,915	394	
Feb-20		80,625					79,192	21,946	394	
Mar-20		79,389					79,284	21,975	395	
Apr-20		80,245					79,376	22,006	395	
May-20		79,579					79,468	22,036	395	
Jun-20		79,674					79,559	22,067	395	
Jul-20		79,762					79,650	22,097	395	
Aug-20		79,854					79,742	22,128	396	
Sep-20		79,944					79,834	22,159	396	
Oct-20		78,714					79,927	22,189	396	
Nov-20		80,124					80,019	22,220	396	
Dec-20		82,077					80,112	22,250	397	
Jan-21		82,455					80,204	22,281	397	
Feb-21		81,727					80,295	22,312	397	
Mar-21		80,482					80,386	22,340	397	
Apr-21		81,334					80,477	22,371	397	
May-21		80,664					80,568	22,401	398	
Jun-21		80,757					80,658	22,432	398	
Jul-21		80,846					80,748	22,462	398	
Aug-21		80,939					80,839	22,493	398	
Sep-21		81,031					80,929	22,524	398	
Oct-21		79,802					81,020	22,554	399	
Nov-21		81,214					81,111	22,585	399	
Dec-21		83,169					81,202	22,615	399	
Jan-22		83,548					81,293	22,646	399	
Feb-22		82,821					81,384	22,677	399	
Mar-22		81,577					81,475	22,705	400	
Apr-22		82,430					81,566	22,736	400	
May-22		81,762					81,658	22,766	400	
Jun-22		81,856					81,750	22,797	400	
Jul-22		81,947					81,841	22,827	401	
Aug-22		82,041					81,933	22,858	401	
Sep-22		82,135					82,025	22,889	401	
Oct-22		80,908					82,117	22,919	401	
Nov-22		82,320					82,210	22,950	402	
Dec-22		84,276					82,302	22,980	402	

Modeling Results
Liberty Utilities
Residential Heating Sales Use per Customer

Dependent Variable: RHS_UPC
Method AutoReg
Observations 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
Intercept	1	32.33	3.45	9.38	0.00
BDD	1	0.02	0.00	3.86	0.00
NGPRCR_1	1	(0.81)	0.19	(4.23)	0.00
dm1	1	93.02	5.11	18.21	0.00
dm2	1	96.77	5.22	18.52	0.00
dm3	1	87.76	4.68	18.74	0.00
dm4	1	61.95	3.68	16.82	0.00
dm5	1	24.56	2.50	9.83	0.00
dm11	1	21.37	2.86	7.48	0.00
dm12	1	58.78	4.23	13.89	0.00
AR1	1	0.29	0.11	2.56	0.01
AR10	1	0.33	0.12	2.65	0.01

Model Fitness:

Regress R-Square	0.9967
Total R-Square	0.9938
SSE	1124.66
MSE	16.30
SBC	497.07
MAE	2.88
MAPE	6.49
Durbin-Watson	1.93
Root MSE	4.04
AIC	468.34
AICC	472.93
HQC	479.87

Modeling Results
Liberty Utilities
Residential Heating Sales Use per Customer

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month			Independent Variable	
	Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD	NGPRCR_1
	Aug-10	15	18	(3)	-16.62%	(0.79)			2	18
	Sep-10	16	20	(3)	-16.38%	(0.86)			39	18
	Oct-10	24	23	1	4.34%	0.26			261	18
	Nov-10	53	51	2	4.26%	0.57			584	16
	Dec-10	95	96	(1)	-0.97%	(0.25)			924	13
	Jan-11	132	136	(4)	-3.07%	(1.11)			1,234	13
	Feb-11	146	141	5	3.44%	1.28			1,220	13
	Mar-11	129	125	5	3.62%	1.20			1,006	13
	Apr-11	99	95	4	4.33%	1.09			710	13
	May-11	51	50	1	2.58%	0.34			364	14
	Jun-11	26	23	3	11.48%	0.71			150	16
	Jul-11	19	20	(1)	-5.53%	(0.29)	806	798	39	16
	Aug-11	15	17	(2)	-9.49%	(0.42)	806	796	1	19
	Sep-11	16	18	(1)	-8.21%	(0.39)	806	794	37	19
	Oct-11	22	23	(1)	-6.46%	(0.40)	804	795	245	18
	Nov-11	57	50	6	12.47%	1.66	808	795	500	17
	Dec-11	88	88	0	0.12%	0.03	801	787	752	15
	Jan-12	136	133	4	2.73%	0.96	805	783	1,016	13
	Feb-12	134	134	(0)	-0.11%	(0.04)	793	776	1,013	13
	Mar-12	134	124	10	8.31%	2.73	798	775	784	13
	Apr-12	82	89	(7)	-7.56%	(1.78)	781	769	543	13
	May-12	52	54	(2)	-3.02%	(0.43)	781	773	294	15
	Jun-12	27	23	4	16.10%	1.00	783	773	116	14
	Jul-12	17	20	(3)	-13.62%	(0.72)	781	772	39	16
	Aug-12	15	19	(4)	-20.58%	(1.05)	781	775	-	18
	Sep-12	16	16	(0)	-2.93%	(0.12)	780	773	63	19
	Oct-12	26	24	2	9.60%	0.60	784	774	229	18
	Nov-12	45	49	(4)	-8.74%	(1.15)	773	773	564	14
	Dec-12	97	99	(2)	-1.87%	(0.49)	782	784	884	12
	Jan-13	134	130	4	2.69%	0.93	780	782	1,071	12
	Feb-13	146	142	3	2.12%	0.80	791	790	1,095	12
	Mar-13	124	125	(1)	-0.76%	(0.25)	781	791	955	12
	Apr-13	94	96	(2)	-1.76%	(0.45)	793	798	695	13
	May-13	50	54	(4)	-8.27%	(1.19)	791	799	355	13
	Jun-13	27	25	2	9.24%	0.61	791	800	125	14
	Jul-13	17	19	(2)	-10.51%	(0.54)	791	800	20	16
	Aug-13	15	16	(1)	-4.16%	(0.18)	791	796	1	19
	Sep-13	17	20	(3)	-13.49%	(0.70)	792	800	70	21
	Oct-13	22	20	2	7.93%	0.43	789	797	260	20
	Nov-13	50	50	(0)	-0.94%	(0.12)	793	797	592	17
	Dec-13	98	95	3	3.25%	0.82	794	793	979	14
	Jan-14	139	136	3	2.42%	0.87	798	798	1,226	15
	Feb-14	140	138	1	0.86%	0.31	792	794	1,217	14
	Mar-14	122	128	(6)	-4.95%	(1.68)	790	797	1,108	15
	Apr-14	102	96	6	6.59%	1.68	798	797	809	16
	May-14	54	49	5	10.35%	1.35	803	792	377	16
	Jun-14	28	20	8	38.05%	2.03	803	787	120	17
	Jul-14	17	17	(1)	-3.73%	(0.17)	803	785	13	16
	Aug-14	16	17	(1)	-4.90%	(0.22)	803	786	4	20
	Sep-14	15	17	(2)	-9.26%	(0.42)	802	783	70	21
	Oct-14	22	20	2	8.30%	0.45	802	783	239	20
	Nov-14	47	49	(1)	-2.65%	(0.34)	799	782	560	16
	Dec-14	90	95	(5)	-5.40%	(1.36)	791	782	873	15
	Jan-15	131	135	(4)	-2.88%	(1.03)	784	781	1,158	16
	Feb-15	127	137	(10)	-7.23%	(2.63)	772	780	1,366	17
	Mar-15	130	131	(1)	-0.69%	(0.24)	780	783	1,231	16
	Apr-15	95	93	1	1.52%	0.38	773	781	799	15
	May-15	53	52	1	2.07%	0.28	771	784	328	15
	Jun-15	26	22	4	18.57%	1.07	769	785	103	15
	Jul-15	20	19	0	0.68%	0.04	772	788	37	16
	Aug-15	15	17	(2)	-12.04%	(0.54)	771	788	1	19
	Sep-15	15	17	(2)	-11.88%	(0.53)	771	788	29	22
	Oct-15	22	20	1	7.35%	0.39	771	788	246	22
	Nov-15	50	48	2	4.04%	0.51	773	787	509	17
	Dec-15	96	95	1	0.72%	0.18	779	787	671	14
	Jan-16	120	128	(8)	-6.16%	(2.09)	768	780	932	15
	Feb-16	136	139	(3)	-2.17%	(0.80)	777	782	1,039	14
	Mar-16	126	124	2	1.87%	0.62	773	775	848	12
	Apr-16	92	95	(3)	-2.70%	(0.68)	770	776	637	11
	May-16	50	55	(5)	-9.60%	(1.41)	767	780	383	12
	Jun-16	26	25	0	0.78%	0.05	767	783	124	14
	Jul-16	17	18	(1)	-6.52%	(0.31)	764	782	20	18
	Aug-16	14	14	(0)	-1.87%	(0.07)	763	779	4	22
	Sep-16	14	13	1	4.24%	0.15	762	775	37	24
	Oct-16	22	16	7	42.33%	1.76	763	771	237	24
	Nov-16	49	49	(0)	-0.95%	(0.12)	762	772	524	19
	Dec-16	94	94	0	0.40%	0.10	760	771	859	15
	Jan-17	136	132	4	3.02%	1.06	776	775	1,057	14
	Feb-17	142	136	6	4.30%	1.55	781	771	957	13

Modeling Results
Liberty Utilities
Residential Heating Sales Use per Customer

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month		Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD	NGPRCR_1
Mar-17	116	126	(10)	-8.01%	(2.67)	771	773	958	13
Apr-17	101	100	2	1.74%	0.46	780	778	733	12
May-17		50					772	211	13
Jun-17		24					770	141	14
Jul-17		17					770	29	19
Aug-17		12					767	8	24
Sep-17		13					767	62	25
Oct-17		16					768	265	26
Nov-17		46					764	561	20
Dec-17		92					763	879	15
Jan-18		137					768	1,138	15
Feb-18		136					768	1,137	13
Mar-18		127					770	972	13
Apr-18		96					766	705	12
May-18		53					770	374	13
Jun-18		24					770	141	14
Jul-18		17					770	29	19
Aug-18		13					772	8	24
Sep-18		13					772	62	25
Oct-18		17					772	265	26
Nov-18		46					772	561	20
Dec-18		95					775	879	16
Jan-19		133					770	1,138	15
Feb-19		139					773	1,137	13
Mar-19		126					772	972	13
Apr-19		96					772	705	12
May-19		53					772	374	13
Jun-19		23					771	141	15
Jul-19		17					771	29	19
Aug-19		13					771	8	24
Sep-19		13					771	62	26
Oct-19		15					769	265	26
Nov-19		47					771	561	20
Dec-19		93					769	879	16
Jan-20		133					770	1,138	15
Feb-20		138					769	1,137	13
Mar-20		126					769	972	14
Apr-20		96					769	705	12
May-20		53					769	374	13
Jun-20		23					769	141	15
Jul-20		17					769	29	19
Aug-20		13					769	8	24
Sep-20		12					768	62	26
Oct-20		16					768	265	26
Nov-20		47					768	561	21
Dec-20		94					768	879	16
Jan-21		133					768	1,138	15
Feb-21		138					768	1,137	13
Mar-21		126					767	972	14
Apr-21		96					767	705	13
May-21		53					767	374	13
Jun-21		23					767	141	15
Jul-21		17					767	29	19
Aug-21		12					767	8	25
Sep-21		12					767	62	26
Oct-21		16					766	265	26
Nov-21		47					766	561	21
Dec-21		93					766	879	16
Jan-22		133					766	1,138	15
Feb-22		138					766	1,137	13
Mar-22		126					766	972	14
Apr-22		96					766	705	13
May-22		53					766	374	13
Jun-22		23					766	141	15
Jul-22		17					765	29	20
Aug-22		12					765	8	25
Sep-22		12					765	62	27
Oct-22		15					765	265	27
Nov-22		46					765	561	21
Dec-22		93					765	879	16

Modeling Results
Liberty Utilities
Residential Heating Sales Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month			Independent Variable			
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD	DT	HH_1	
Aug-10	1,046,982	1,228,488	(181,506)	-14.77%	(0.65)				2	18,475	366.91
Sep-10	1,126,977	1,375,362	(248,385)	-18.06%	(0.89)				39	18,506	367.19
Oct-10	1,604,829	1,521,230	83,599	5.50%	0.30				261	18,536	367.50
Nov-10	3,628,367	3,469,400	158,967	4.58%	0.57				584	18,567	367.85
Dec-10	6,692,418	6,821,334	(128,916)	-1.89%	(0.46)				924	18,597	368.22
Jan-11	9,410,000	9,693,961	(283,961)	-2.93%	(1.02)				1,234	18,628	368.61
Feb-11	10,255,617	9,842,400	413,217	4.20%	1.48				1,220	18,659	369.02
Mar-11	9,102,093	8,690,970	411,123	4.73%	1.48				1,006	18,687	369.41
Apr-11	7,051,759	6,748,424	303,335	4.49%	1.09				710	18,718	369.80
May-11	3,645,561	3,520,009	125,552	3.57%	0.45				364	18,748	370.20
Jun-11	1,841,043	1,637,789	203,254	12.41%	0.73				150	18,779	370.59
Jul-11	1,340,459	1,413,591	(73,132)	-5.17%	(0.26)	56,746,103	55,962,956		39	18,809	370.95
Aug-11	1,068,190	1,175,072	(106,882)	-9.10%	(0.38)	56,767,311	55,909,540		1	18,840	371.30
Sep-11	1,140,417	1,248,251	(107,834)	-8.64%	(0.39)	56,780,751	55,782,428		37	18,871	371.61
Oct-11	1,504,587	1,579,421	(74,834)	-4.74%	(0.27)	56,680,509	55,840,619		245	18,901	371.90
Nov-11	3,966,152	3,533,010	433,142	12.26%	1.56	57,018,294	55,904,229		500	18,932	372.17
Dec-11	6,326,042	6,353,881	(27,840)	-0.44%	(0.10)	56,651,918	55,436,777		752	18,962	372.41
Jan-12	9,684,394	9,518,006	166,387	1.75%	0.60	56,926,311	55,260,823		1,016	18,993	372.64
Feb-12	9,606,073	9,443,034	163,039	1.73%	0.59	56,276,768	54,861,457		1,013	19,024	372.86
Mar-12	9,569,595	8,825,280	744,315	8.43%	2.67	56,744,271	54,995,768		784	19,053	373.06
Apr-12	5,929,916	6,406,240	(476,323)	-7.44%	(1.71)	55,622,428	54,653,584		543	19,084	373.25
May-12	3,754,716	3,826,923	(72,207)	-1.89%	(0.26)	55,731,583	54,960,498		294	19,114	373.44
Jun-12	1,938,328	1,669,496	268,832	16.10%	0.97	55,828,869	54,992,205		116	19,145	373.63
Jul-12	1,233,382	1,418,172	(184,790)	-13.03%	(0.66)	55,721,792	54,996,787		39	19,175	373.82
Aug-12	1,084,359	1,372,840	(288,481)	-21.01%	(1.04)	55,737,961	55,194,555		-	19,206	374.01
Sep-12	1,096,486	1,138,710	(42,224)	-3.71%	(0.15)	55,694,030	55,085,014		63	19,237	374.20
Oct-12	1,759,592	1,623,888	135,704	8.36%	0.49	55,949,035	55,129,481		229	19,267	374.40
Nov-12	3,143,729	3,449,422	(305,693)	-8.86%	(1.10)	55,126,612	55,045,893		564	19,298	374.61
Dec-12	7,052,667	7,198,650	(145,983)	-2.03%	(0.52)	55,853,238	55,890,661		884	19,328	374.83
Jan-13	9,871,969	9,574,430	297,539	3.11%	1.07	56,040,813	55,947,084		1,071	19,359	375.05
Feb-13	10,532,814	10,472,584	60,230	0.58%	0.22	56,967,553	56,976,634		1,095	19,390	375.29
Mar-13	8,765,726	8,908,612	(142,885)	-1.60%	(0.51)	56,163,684	57,059,965		955	19,418	375.52
Apr-13	6,814,611	6,904,639	(90,028)	-1.30%	(0.32)	57,048,379	57,558,365		695	19,449	375.77
May-13	3,619,799	3,930,866	(311,067)	-7.91%	(1.12)	56,913,461	57,662,308		355	19,479	376.04
Jun-13	1,973,944	1,826,398	147,546	8.08%	0.53	56,949,078	57,819,211		125	19,510	376.32
Jul-13	1,243,273	1,399,083	(155,810)	-11.14%	(0.56)	56,958,969	57,800,122		20	19,540	376.62
Aug-13	1,106,762	1,142,804	(36,042)	-3.15%	(0.13)	56,981,372	57,570,086		1	19,571	376.94
Sep-13	1,198,473	1,419,351	(220,878)	-15.56%	(0.79)	57,083,358	57,850,727		70	19,602	377.27
Oct-13	1,521,980	1,421,686	100,294	7.05%	0.36	56,845,747	57,648,526		260	19,632	377.61
Nov-13	3,528,856	3,568,786	(39,930)	-1.12%	(0.14)	57,230,874	57,767,890		592	19,663	377.96
Dec-13	7,327,674	7,015,736	311,938	4.45%	1.12	57,505,881	57,584,976		979	19,693	378.32
Jan-14	10,396,864	10,282,329	114,535	1.11%	0.41	58,030,776	58,292,875		1,226	19,724	378.67
Feb-14	9,982,848	10,247,914	(265,066)	-2.59%	(0.95)	57,480,810	58,068,205		1,217	19,755	379.03
Mar-14	8,705,582	9,083,274	(377,692)	-4.16%	(1.36)	57,420,666	58,242,868		1,108	19,783	379.37
Apr-14	7,559,996	6,993,619	566,377	8.10%	2.03	58,166,051	58,331,848		809	19,814	379.70
May-14	4,128,394	3,681,010	447,384	12.15%	1.61	58,674,646	58,081,992		377	19,844	380.04
Jun-14	2,055,518	1,531,350	524,167	34.23%	1.88	58,756,219	57,786,944		120	19,875	380.36
Jul-14	1,205,468	1,251,109	(45,641)	-3.65%	(0.16)	58,718,414	57,638,969		13	19,905	380.66
Aug-14	1,119,142	1,212,369	(93,227)	-7.69%	(0.33)	58,730,794	57,708,533		4	19,936	380.94
Sep-14	1,058,074	1,205,576	(147,502)	-12.23%	(0.53)	58,590,395	57,494,759		70	19,967	381.20
Oct-14	1,518,350	1,419,038	99,311	7.00%	0.36	58,586,765	57,492,111		239	19,997	381.43
Nov-14	3,383,186	3,495,754	(112,568)	-3.22%	(0.40)	58,441,095	57,419,079		560	20,028	381.65
Dec-14	6,915,960	7,195,616	(279,656)	-3.89%	(1.00)	58,029,381	57,598,960		873	20,058	381.85
Jan-15	9,975,755	10,456,075	(480,320)	-4.59%	(1.73)	57,608,272	57,772,706		1,158	20,089	382.02
Feb-15	9,839,927	10,422,263	(582,336)	-5.59%	(2.09)	57,465,351	57,947,054		1,366	20,120	382.19
Mar-15	9,832,342	9,909,140	(76,797)	-0.78%	(0.28)	58,592,112	58,772,920		1,231	20,148	382.33
Apr-15	7,270,233	7,151,294	118,938	1.66%	0.43	58,302,348	58,930,595		799	20,179	382.45
May-15	4,054,532	3,940,398	114,134	2.90%	0.41	58,228,486	59,189,983		328	20,209	382.57
Jun-15	1,958,015	1,622,888	335,127	20.65%	1.20	58,130,984	59,281,520		103	20,240	382.67
Jul-15	1,478,782	1,465,671	13,111	0.89%	0.05	58,404,298	59,496,083		37	20,270	382.76
Aug-15	1,113,923	1,247,869	(133,946)	-10.73%	(0.48)	58,399,079	59,531,582		1	20,301	382.84
Sep-15	1,086,251	1,246,242	(159,991)	-12.84%	(0.57)	58,427,256	59,572,249		29	20,332	382.91
Oct-15	1,570,660	1,450,492	120,168	8.28%	0.43	58,479,567	59,603,703		246	20,362	382.97
Nov-15	3,653,151	3,517,782	135,369	3.85%	0.49	58,749,531	59,625,730		509	20,393	383.03
Dec-15	7,319,738	7,227,044	92,694	1.28%	0.33	59,153,310	59,657,158		671	20,423	383.09
Jan-16	9,294,033	9,841,392	(547,359)	-5.56%	(1.97)	58,471,588	59,042,475		932	20,454	383.14
Feb-16	10,393,976	10,645,052	(251,075)	-2.36%	(0.90)	59,025,637	59,265,263		1,039	20,485	383.21
Mar-16	9,586,706	9,348,501	238,205	2.55%	0.86	58,780,001	58,704,625		848	20,514	383.27
Apr-16	6,982,850	7,194,170	(211,320)	-2.94%	(0.76)	58,492,619	58,747,501		637	20,545	383.34
May-16	3,849,164	4,185,647	(336,483)	-8.04%	(1.21)	58,287,251	58,992,750		383	20,575	383.43
Jun-16	1,973,174	1,946,928	26,245	1.35%	0.09	58,302,410	59,316,791		124	20,606	383.53
Jul-16	1,275,538	1,365,221	(89,683)	-6.57%	(0.32)	58,099,165	59,216,341		20	20,636	383.64
Aug-16	1,024,715	1,047,758	(23,043)	-2.20%	(0.08)	58,009,958	59,016,230		4	20,667	383.78
Sep-16	1,043,811	1,001,657	42,154	4.21%	0.15	57,967,518	58,771,645		37	20,698	383.93
Oct-16	1,646,187	1,150,276	495,911	43.11%	1.78	58,043,045	58,471,429		237	20,728	384.10
Nov-16	3,698,647	3,705,236	(6,589)	-0.18%	(0.02)	58,088,541	58,658,883		524	20,759	384.29
Dec-16	7,226,749	7,324,220	(97,470)	-1.33%	(0.35)	57,995,552	58,756,059		859	20,789	384.50
Jan-17	10,568,800	10,174,379	394,421	3.88%	1.42	59,270,319	59,089,046		1,057	20,820	384.72
Feb-17	10,824,412	10,385,055	439,357	4.23%	1.58	59,700,754	58,829,049		957	20,851	384.95

Modeling Results
Liberty Utilities
Residential Heating Sales Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month			Independent Variable		
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD	DT	HH_1
Mar-17	8,860,891	9,577,928	(717,037)	-7.49%	(2.58)	58,974,939	59,058,476	958	20,879	385.19
Apr-17	7,857,807	7,737,985	119,823	1.55%	0.43	59,849,896	59,602,291	733	20,910	385.43
May-17		3,812,133					59,228,777	211	20,940	385.69
Jun-17		1,802,867					59,084,715	141	20,971	385.96
Jul-17		1,324,175					59,043,669	29	21,001	386.24
Aug-17		890,134					58,886,044	8	21,032	386.52
Sep-17		988,765					58,873,152	62	21,063	386.81
Oct-17		1,227,657					58,950,533	265	21,093	387.09
Nov-17		3,524,554					58,769,852	561	21,124	387.38
Dec-17		7,224,470					58,670,102	879	21,154	387.67
Jan-18		10,852,924					59,348,647	1,138	21,185	387.97
Feb-18		10,653,087					59,616,679	1,137	21,216	388.26
Mar-18		9,834,410					59,873,160	972	21,244	388.54
Apr-18		7,517,334					59,652,509	705	21,275	388.82
May-18		4,128,386					59,968,763	374	21,305	389.10
Jun-18		1,827,416					59,993,311	141	21,336	389.38
Jul-18		1,353,884					60,023,021	29	21,366	389.66
Aug-18		1,030,992					60,163,879	8	21,397	389.93
Sep-18		1,024,201					60,199,315	62	21,428	390.20
Oct-18		1,281,315					60,252,972	265	21,458	390.46
Nov-18		3,559,107					60,287,526	561	21,489	390.71
Dec-18		7,589,613					60,652,669	879	21,519	390.96
Jan-19		10,642,154					60,441,898	1,138	21,550	391.21
Feb-19		11,022,978					60,811,790	1,137	21,581	391.46
Mar-19		9,865,157					60,842,537	972	21,609	391.69
Apr-19		7,632,410					60,957,613	705	21,640	391.92
May-19		4,168,086					60,997,313	374	21,670	392.16
Jun-19		1,800,205					60,970,102	141	21,701	392.40
Jul-19		1,362,568					60,978,786	29	21,731	392.64
Aug-19		1,012,302					60,960,096	8	21,762	392.88
Sep-19		1,030,508					60,966,404	62	21,793	393.12
Oct-19		1,201,759					60,886,848	265	21,823	393.36
Nov-19		3,740,124					61,067,864	561	21,854	393.60
Dec-19		7,568,555					61,046,807	879	21,884	393.84
Jan-20		10,841,118					61,245,771	1,138	21,915	394.08
Feb-20		11,140,650					61,363,442	1,137	21,946	394.32
Mar-20		10,003,904					61,502,189	972	21,975	394.55
Apr-20		7,739,556					61,609,335	705	22,006	394.78
May-20		4,211,330					61,652,578	374	22,036	395.01
Jun-20		1,818,906					61,671,280	141	22,067	395.24
Jul-20		1,360,120					61,668,831	29	22,097	395.46
Aug-20		1,034,786					61,691,316	8	22,128	395.68
Sep-20		967,299					61,628,106	62	22,159	395.89
Oct-20		1,251,751					61,678,098	265	22,189	396.10
Nov-20		3,739,100					61,677,075	561	22,220	396.31
Dec-20		7,678,375					61,786,895	879	22,250	396.51
Jan-21		10,966,087					61,911,865	1,138	22,281	396.71
Feb-21		11,283,779					62,054,994	1,137	22,312	396.92
Mar-21		10,135,155					62,186,245	972	22,340	397.11
Apr-21		7,834,270					62,280,959	705	22,371	397.31
May-21		4,263,371					62,333,000	374	22,401	397.51
Jun-21		1,824,279					62,338,373	141	22,432	397.72
Jul-21		1,388,447					62,366,700	29	22,462	397.93
Aug-21		1,009,198					62,341,112	8	22,493	398.14
Sep-21		983,624					62,357,436	62	22,524	398.36
Oct-21		1,241,338					62,347,024	265	22,554	398.58
Nov-21		3,783,654					62,391,577	561	22,585	398.81
Dec-21		7,768,832					62,482,034	879	22,615	399.03
Jan-22		11,101,762					62,617,708	1,138	22,646	399.26
Feb-22		11,429,579					62,763,508	1,137	22,677	399.50
Mar-22		10,265,684					62,894,037	972	22,705	399.72
Apr-22		7,937,788					62,997,555	705	22,736	399.95
May-22		4,307,050					63,041,234	374	22,766	400.19
Jun-22		1,852,836					63,069,791	141	22,797	400.43
Jul-22		1,388,875					63,070,219	29	22,827	400.66
Aug-22		1,018,336					63,079,357	8	22,858	400.90
Sep-22		980,739					63,076,472	62	22,889	401.15
Oct-22		1,248,221					63,083,356	265	22,919	401.38
Nov-22		3,825,120					63,124,822	561	22,950	401.62
Dec-22		7,864,535					63,220,525	879	22,980	401.86

Modeling Results
Liberty Utilities
Residential Heating Sales Volumes

Actual, Projected, Residual (Therms)							Rolling 12-Month			Independent Variable		
Plan Year	Date	Actual	Projected	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD	DT	HH_1
	Actual		Projected				Residual			BDD	DT	HH_1
PY2011		56,680,509		55,840,619						6,511	224,804	4,439
PY2012		55,949,035		55,129,481						5,346	229,192	4,480
PY2013		56,845,747		57,648,526						6,092	233,576	4,512
PY2014		58,586,765		57,492,111						6,751	237,956	4,558
PY2015		58,479,567		59,603,703						6,727	242,336	4,589
PY2016		58,043,045		58,471,429						5,439	246,724	4,601
PY2017				58,950,533						5,804	251,108	4,627
PY2018				60,252,972						6,272	255,488	4,667
PY2019				60,886,848						6,272	259,868	4,705
PY2020				61,678,098						6,272	264,256	4,739
PY2021				62,347,024						6,272	268,640	4,769
PY2022				63,083,356						6,272	273,020	4,801
Growth												
PY2012		(731,473)		(711,138)						(1,165)	4,388	40
PY2013		896,711		2,519,045						746	4,384	32
PY2014		1,741,018		(156,415)						659	4,380	46
PY2015		(107,197)		2,111,592						(24)	4,380	32
PY2016		(436,522)		(1,132,274)						(1,289)	4,388	12
PY2017				479,104						365	4,384	26
PY2018				1,302,439						469	4,380	40
PY2019				633,875						-	4,380	37
PY2020				791,251						-	4,388	34
PY2021				668,926						-	4,384	31
PY2022				736,332						-	4,380	32
Growth Rate (%)												
PY2012		-1.3%		-1.3%						-17.9%	2.0%	0.9%
PY2013		1.6%		4.6%						13.9%	1.9%	0.7%
PY2014		3.1%		-0.3%						10.8%	1.9%	1.0%
PY2015		-0.2%		3.7%						-0.3%	1.8%	0.7%
PY2016		-0.7%		-1.9%						-19.2%	1.8%	0.3%
PY2017				0.8%						6.7%	1.8%	0.6%
PY2018				2.2%						8.1%	1.7%	0.9%
PY2019				1.1%						0.0%	1.7%	0.8%
PY2020				1.3%						0.0%	1.7%	0.7%
PY2021				1.1%						0.0%	1.7%	0.6%
PY2022				1.2%						0.0%	1.6%	0.7%

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Customers

Dependent Variable: RNS_CUS
Method AutoReg
Observations 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
HH	1	33.07	6.43	5.14	0.00
DT	1	(0.47)	0.12	(3.87)	0.00
AR1	1	(1.30)	0.14	(9.21)	0.00
AR2	1	0.65	0.13	4.88	0.00

Model Fitness:

Regress R-Square 0.9973
Total R-Square 0.9997
SSE 113420.55
MSE 3658.73
SBC 398.53
MAE 44.84
MAPE 1.41
Durbin-Watson 1.84
Root MSE 60.49
AIC 392.31
AICC 393.65
HQC 394.46

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Customers

Actual, Projected, Residual					Rolling 12-Month			Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	HH	DT
Aug-10	4,146	4,188	(42)	-1.00%	(0.40)			367	18,475
Sep-10	4,024	3,992	32	0.81%	0.31			367	18,506
Oct-10	3,951	4,086	(134)	-3.29%	(1.28)			368	18,536
Nov-10	4,004	3,858	146	3.78%	1.39			368	18,567
Dec-10	4,091	4,013	78	1.94%	0.74			368	18,597
Jan-11	4,086	4,197	(111)	-2.65%	(1.06)			369	18,628
Feb-11	3,982	4,065	(83)	-2.04%	(0.79)			369	18,659
Mar-11	3,941	4,027	(87)	-2.15%	(0.83)			369	18,687
Apr-11	3,956	3,915	41	1.05%	0.39			370	18,718
May-11	3,931	3,949	(18)	-0.46%	(0.17)			370	18,748
Jun-11	3,942	3,569	374	10.47%	3.56			371	18,779
Jul-11	3,967	3,905	62	1.58%	0.59	4,002	3,980	371	18,809
Aug-11	3,953	3,993	(40)	-1.00%	(0.38)	3,986	3,964	371	18,840
Sep-11	3,867	3,836	31	0.81%	0.29	3,973	3,951	372	18,871
Oct-11	3,836	3,967	(130)	-3.29%	(1.24)	3,963	3,941	372	18,901
Nov-11	3,864	3,724	141	3.78%	1.34	3,951	3,930	372	18,932
Dec-11	3,955	3,880	75	1.94%	0.72	3,940	3,919	372	18,962
Jan-12	3,903	4,009	(106)	-2.65%	(1.01)	3,925	3,903	373	18,993
Feb-12	3,891	3,972	(81)	-2.04%	(0.77)	3,917	3,895	373	19,024
Mar-12	3,789	3,873	(83)	-2.15%	(0.79)	3,905	3,883	373	19,053
Apr-12	3,823	3,783	40	1.05%	0.38	3,893	3,872	373	19,084
May-12	3,813	3,830	(18)	-0.46%	(0.17)	3,884	3,862	373	19,114
Jun-12	3,767	3,410	357	10.47%	3.40	3,869	3,848	374	19,145
Jul-12	3,781	3,722	59	1.58%	0.56	3,854	3,833	374	19,175
Aug-12	3,722	3,759	(38)	-1.00%	(0.36)	3,834	3,814	374	19,206
Sep-12	3,730	3,700	30	0.81%	0.28	3,823	3,802	374	19,237
Oct-12	3,612	3,735	(123)	-3.29%	(1.17)	3,804	3,783	374	19,267
Nov-12	3,667	3,533	134	3.78%	1.27	3,788	3,767	375	19,298
Dec-12	3,766	3,694	72	1.94%	0.68	3,772	3,752	375	19,328
Jan-13	3,777	3,880	(103)	-2.65%	(0.98)	3,761	3,741	375	19,359
Feb-13	3,689	3,766	(77)	-2.04%	(0.73)	3,745	3,724	375	19,390
Mar-13	3,584	3,662	(79)	-2.15%	(0.75)	3,727	3,706	376	19,418
Apr-13	3,635	3,597	38	1.05%	0.36	3,712	3,691	376	19,449
May-13	3,672	3,688	(17)	-0.46%	(0.16)	3,700	3,679	376	19,479
Jun-13	3,672	3,324	348	10.47%	3.32	3,692	3,672	376	19,510
Jul-13	3,673	3,616	57	1.58%	0.54	3,683	3,663	377	19,540
Aug-13	3,730	3,768	(38)	-1.00%	(0.36)	3,684	3,664	377	19,571
Sep-13	3,662	3,632	29	0.81%	0.28	3,678	3,658	377	19,602
Oct-13	3,625	3,748	(123)	-3.29%	(1.17)	3,679	3,659	378	19,632
Nov-13	3,611	3,479	131	3.78%	1.25	3,674	3,655	378	19,663
Dec-13	3,767	3,695	72	1.94%	0.68	3,675	3,655	378	19,693
Jan-14	3,770	3,872	(103)	-2.65%	(0.98)	3,674	3,654	379	19,724
Feb-14	3,614	3,690	(75)	-2.04%	(0.72)	3,668	3,648	379	19,755
Mar-14	3,601	3,680	(79)	-2.15%	(0.75)	3,669	3,649	379	19,783
Apr-14	3,652	3,615	38	1.05%	0.36	3,671	3,651	380	19,814
May-14	3,762	3,779	(17)	-0.46%	(0.16)	3,678	3,658	380	19,844
Jun-14	3,635	3,291	345	10.47%	3.28	3,675	3,655	381	19,875
Jul-14	3,614	3,558	56	1.58%	0.54	3,670	3,651	381	19,905
Aug-14	3,447	3,482	(35)	-1.00%	(0.33)	3,647	3,627	381	19,936
Sep-14	3,304	3,278	26	0.81%	0.25	3,617	3,597	381	19,967
Oct-14	3,093	3,198	(105)	-3.29%	(1.00)	3,573	3,551	382	19,997
Nov-14	3,127	3,013	114	3.78%	1.08	3,532	3,513	382	20,028
Dec-14	3,254	3,192	62	1.94%	0.59	3,489	3,471	382	20,058
Jan-15	3,244	3,332	(88)	-2.65%	(0.84)	3,446	3,426	382	20,089
Feb-15	3,166	3,232	(66)	-2.04%	(0.63)	3,408	3,387	382	20,120
Mar-15	3,069	3,136	(68)	-2.15%	(0.64)	3,364	3,342	382	20,148
Apr-15	3,086	3,054	32	1.05%	0.31	3,317	3,295	383	20,179
May-15	3,124	3,138	(14)	-0.46%	(0.14)	3,264	3,242	383	20,209
Jun-15	3,160	3,171	(11)	-0.35%	(0.11)	3,224	3,232	383	20,240
Jul-15	3,142	3,190	(47)	-1.48%	(0.45)	3,185	3,201	383	20,270
Aug-15	3,124	3,139	(15)	-0.48%	(0.14)	3,158	3,173	383	20,301
Sep-15	3,042	3,122	(80)	-2.55%	(0.76)	3,136	3,160	383	20,332
Oct-15	3,008	3,025	(16)	-0.54%	(0.16)	3,129	3,145	383	20,362
Nov-15	3,032	3,028	4	0.14%	0.04	3,121	3,147	383	20,393
Dec-15	3,109	3,078	31	1.02%	0.30	3,109	3,137	383	20,423
Jan-16	3,122	3,157	(35)	-1.10%	(0.33)	3,099	3,122	383	20,454
Feb-16	3,068	3,120	(53)	-1.69%	(0.50)	3,091	3,113	383	20,485
Mar-16	3,036	3,038	(1)	-0.04%	(0.01)	3,088	3,105	383	20,514
Apr-16	3,110	3,027	83	2.73%	0.79	3,090	3,103	383	20,545
May-16	3,009	3,000	9	0.30%	0.09	3,080	3,091	384	20,575
Jun-16	3,029	3,027	2	0.06%	0.02	3,069	3,079	384	20,606
Jul-16	3,070	3,046	25	0.82%	0.24	3,063	3,067	384	20,636
Aug-16	3,036	3,083	(47)	-1.53%	(0.45)	3,056	3,062	384	20,667

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Customers

Actual, Projected, Residual					Rolling 12-Month				Independent Variable		
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual	R12	Projected	R12	HH	DT
Sep-16	2,990	3,008	(18)	-0.61%	(0.18)	3,052		3,053		384	20,698
Oct-16	2,953	2,968	(15)	-0.51%	(0.14)	3,047		3,048		384	20,728
Nov-16	3,032	2,947	84	2.86%	0.80	3,047		3,042		384	20,759
Dec-16	3,090	3,071	18	0.60%	0.17	3,045		3,041		385	20,789
Jan-17	3,147	3,093	54	1.76%	0.52	3,047		3,036		385	20,820
Feb-17	3,068	3,127	(60)	-1.91%	(0.57)	3,047		3,036		385	20,851
Mar-17	3,050	2,986	63	2.12%	0.60	3,048		3,032		385	20,879
Apr-17	3,050	3,011	39	1.30%	0.37	3,043		3,031		386	20,910
May-17		3,022						3,032		386	20,940
Jun-17		2,983						3,029		386	20,971
Jul-17		2,949						3,021		387	21,001
Aug-17		2,929						3,008		387	21,032
Sep-17		2,922						3,001		387	21,063
Oct-17		2,926						2,997		387	21,093
Nov-17		2,932						2,996		388	21,124
Dec-17		2,938						2,985		388	21,154
Jan-18		2,938						2,972		388	21,185
Feb-18		2,933						2,956		389	21,216
Mar-18		2,926						2,951		389	21,244
Apr-18		2,917						2,943		389	21,275
May-18		2,909						2,934		389	21,305
Jun-18		2,902						2,927		390	21,336
Jul-18		2,897						2,923		390	21,366
Aug-18		2,893						2,920		390	21,397
Sep-18		2,888						2,917		390	21,428
Oct-18		2,883						2,913		391	21,458
Nov-18		2,878						2,909		391	21,489
Dec-18		2,872						2,903		391	21,519
Jan-19		2,865						2,897		391	21,550
Feb-19		2,858						2,891		392	21,581
Mar-19		2,852						2,885		392	21,609
Apr-19		2,845						2,879		392	21,640
May-19		2,839						2,873		392	21,670
Jun-19		2,833						2,867		393	21,701
Jul-19		2,827						2,861		393	21,731
Aug-19		2,821						2,855		393	21,762
Sep-19		2,814						2,849		393	21,793
Oct-19		2,808						2,843		394	21,823
Nov-19		2,801						2,836		394	21,854
Dec-19		2,795						2,830		394	21,884
Jan-20		2,789						2,824		394	21,915
Feb-20		2,782						2,817		395	21,946
Mar-20		2,776						2,811		395	21,975
Apr-20		2,769						2,804		395	22,006
May-20		2,762						2,798		395	22,036
Jun-20		2,755						2,792		395	22,067
Jul-20		2,748						2,785		396	22,097
Aug-20		2,741						2,778		396	22,128
Sep-20		2,733						2,772		396	22,159
Oct-20		2,726						2,765		396	22,189
Nov-20		2,718						2,758		397	22,220
Dec-20		2,711						2,751		397	22,250
Jan-21		2,703						2,744		397	22,281
Feb-21		2,695						2,737		397	22,312
Mar-21		2,689						2,729		397	22,340
Apr-21		2,681						2,722		398	22,371
May-21		2,674						2,715		398	22,401
Jun-21		2,666						2,707		398	22,432
Jul-21		2,659						2,700		398	22,462
Aug-21		2,652						2,692		398	22,493
Sep-21		2,645						2,685		399	22,524
Oct-21		2,638						2,678		399	22,554
Nov-21		2,631						2,670		399	22,585
Dec-21		2,625						2,663		399	22,615
Jan-22		2,618						2,656		399	22,646
Feb-22		2,611						2,649		400	22,677
Mar-22		2,605						2,642		400	22,705
Apr-22		2,599						2,635		400	22,736
May-22		2,592						2,628		400	22,766
Jun-22		2,586						2,622		401	22,797
Jul-22		2,580						2,615		401	22,827
Aug-22		2,573						2,608		401	22,858
Sep-22		2,567						2,602		401	22,889
Oct-22		2,560						2,595		402	22,919
Nov-22		2,554						2,589		402	22,950
Dec-22		2,548						2,583		402	22,980

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Use per Customer

Dependent Variable: RNS_UPC
Method: AutoReg
Observations: 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
Intercept	1	18.62	3.15	5.92	0.00
BDD_1	1	0.02	0.00	5.12	0.00
NGPRCR_2	1	(0.42)	0.16	(2.60)	0.01
AR1	1	(0.90)	0.08	(11.44)	0.00
AR3	1	0.30	0.08	3.71	0.00
AR11	1	(0.17)	0.08	(2.21)	0.03

Model Fitness:

Regress R-Square	0.3597
Total R-Square	0.9533
SSE	286.80
MSE	3.82
SBC	361.42
MAE	1.46
MAPE	7.79
Durbin-Watson	2.25
Root MSE	1.96
AIC	347.05
AICC	348.19
HQC	352.82

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Use per Customer

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month		Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD_1	NGPRCR_2
Aug-10	9	12	(3)	-23.87%	(1.53)			19	16
Sep-10	11	9	2	21.28%	0.97			2	18
Oct-10	12	13	(0)	-1.41%	(0.09)			39	18
Nov-10	17	17	0	0.28%	0.02			261	18
Dec-10	24	23	1	3.96%	0.47			584	16
Jan-11	29	30	(1)	-3.57%	(0.56)			924	13
Feb-11	30	33	(3)	-9.23%	(1.58)			1,234	13
Mar-11	27	29	(2)	-7.15%	(1.07)			1,220	13
Apr-11	24	23	1	4.64%	0.55			1,006	13
May-11	19	20	(1)	-5.27%	(0.54)			710	13
Jun-11	14	14	(0)	-1.58%	(0.12)			364	14
Jul-11	12	12	1	5.23%	0.32	227	233	150	16
Aug-11	10	12	(2)	-19.09%	(1.22)	227	233	39	16
Sep-11	10	9	1	11.85%	0.58	227	234	1	19
Oct-11	12	12	(0)	-0.07%	(0.00)	227	233	37	19
Nov-11	19	17	2	9.26%	0.82	229	234	245	18
Dec-11	24	23	1	5.09%	0.60	229	234	500	17
Jan-12	31	28	4	13.04%	1.87	232	231	752	15
Feb-12	31	33	(2)	-6.08%	(1.05)	233	232	1,016	13
Mar-12	31	29	3	8.70%	1.31	238	232	1,013	13
Apr-12	23	25	(1)	-5.64%	(0.72)	237	234	784	13
May-12	20	18	2	11.03%	1.04	239	232	543	13
Jun-12	15	15	1	6.07%	0.46	240	232	294	15
Jul-12	11	14	(2)	-17.45%	(1.23)	239	234	116	14
Aug-12	10	10	0	0.97%	0.05	239	232	39	16
Sep-12	10	9	0	5.25%	0.26	238	232	-	18
Oct-12	13	12	1	9.93%	0.61	239	231	63	19
Nov-12	17	17	(1)	-4.42%	(0.40)	237	232	229	18
Dec-12	26	25	1	3.61%	0.47	239	234	564	14
Jan-13	34	31	3	8.21%	1.32	242	237	884	12
Feb-13	35	36	(1)	-1.78%	(0.33)	246	240	1,071	12
Mar-13	33	33	(0)	-0.78%	(0.14)	247	245	1,095	12
Apr-13	27	29	(1)	-3.74%	(0.56)	251	248	955	12
May-13	21	21	(1)	-3.54%	(0.39)	252	252	695	13
Jun-13	16	14	1	9.82%	0.73	252	251	355	13
Jul-13	12	12	(0)	-0.93%	(0.06)	253	250	125	14
Aug-13	10	10	(1)	-5.68%	(0.30)	252	250	20	16
Sep-13	11	9	2	16.40%	0.80	253	250	1	19
Oct-13	12	13	(1)	-4.53%	(0.30)	253	251	70	21
Nov-13	19	17	2	14.67%	1.27	255	250	260	20
Dec-13	30	26	4	14.93%	2.02	259	251	592	17
Jan-14	39	37	3	7.16%	1.37	265	257	979	14
Feb-14	40	41	(1)	-1.48%	(0.31)	269	262	1,226	15
Mar-14	35	36	(1)	-3.66%	(0.69)	271	265	1,217	14
Apr-14	33	28	5	17.58%	2.60	277	264	1,108	15
May-14	22	25	(3)	-10.97%	(1.43)	279	268	809	16
Jun-14	17	14	3	22.54%	1.65	281	268	377	16
Jul-14	11	11	(0)	-1.65%	(0.10)	280	268	120	17
Aug-14	10	11	(0)	-1.51%	(0.08)	281	268	13	16
Sep-14	10	9	1	8.15%	0.40	280	268	4	20
Oct-14	11	12	(1)	-8.32%	(0.52)	279	267	70	21
Nov-14	15	16	(1)	-7.70%	(0.64)	275	267	239	20
Dec-14	22	23	(1)	-5.81%	(0.70)	267	264	560	16
Jan-15	27	29	(1)	-4.11%	(0.61)	255	256	873	15
Feb-15	28	31	(3)	-9.67%	(1.57)	243	247	1,158	16
Mar-15	28	32	(4)	-11.85%	(1.94)	236	242	1,366	17
Apr-15	25	26	(1)	-3.20%	(0.43)	228	239	1,231	16
May-15	23	20	4	18.15%	1.86	229	234	799	15
Jun-15	12	17	(5)	-28.07%	(2.53)	224	237	328	15
Jul-15	13	11	2	17.28%	0.99	225	237	103	15
Aug-15	9	12	(2)	-20.08%	(1.23)	224	238	37	16
Sep-15	9	10	(0)	-4.98%	(0.25)	223	238	1	19
Oct-15	11	9	2	22.08%	1.01	223	235	29	22
Nov-15	16	15	1	7.07%	0.55	224	234	246	22
Dec-15	25	23	2	8.31%	0.98	227	233	509	17
Jan-16	28	28	0	1.69%	0.24	228	232	671	14
Feb-16	31	29	1	4.07%	0.62	230	230	932	15
Mar-16	31	30	2	5.63%	0.87	234	228	1,039	14
Apr-16	24	27	(4)	-13.09%	(1.84)	232	230	848	12
May-16	18	19	(1)	-4.01%	(0.39)	227	229	637	11
Jun-16	14	14	1	4.51%	0.32	229	225	383	12
Jul-16	11	11	1	5.07%	0.28	227	225	124	14
Aug-16	9	9	(0)	-5.01%	(0.25)	227	222	20	18
Sep-16	9	9	0	1.52%	0.07	226	221	4	22
Oct-16	11	10	1	10.54%	0.57	227	223	37	24

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Use per Customer

<u>Actual, Projected, Residual (Therms/ Customer)</u>						<u>Rolling 12-Month</u>		<u>Independent Variable</u>	
<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>Project Error %</u>	<u>Standard Residual</u>	<u>Actual_R12</u>	<u>Projected_R12</u>	<u>BDD_1</u>	<u>NGPRCR_2</u>
Nov-16	16	16	(0)	-0.76%	(0.06)	227	224	237	24
Dec-16	24	23	2	6.65%	0.79	227	224	524	19
Jan-17	31	31	0	1.11%	0.18	230	228	859	15
Feb-17	34	33	1	2.81%	0.49	233	231	1,057	14
Mar-17	26	30	(5)	-15.70%	(2.48)	228	232	957	13
Apr-17	24	23	0	1.79%	0.22	228	228	958	13
May-17		18					228	733	12
Jun-17		11					225	211	13
Jul-17		11					225	141	14
Aug-17		9					225	29	19
Sep-17		9					225	8	24
Oct-17		11					226	62	25
Nov-17		15					225	265	26
Dec-17		23					225	561	20
Jan-18		29					223	879	15
Feb-18		32					222	1,138	15
Mar-18		31					222	1,137	13
Apr-18		26					225	972	13
May-18		21					227	705	12
Jun-18		15					231	374	13
Jul-18		12					232	141	14
Aug-18		9					232	29	19
Sep-18		9					232	8	24
Oct-18		10					231	62	25
Nov-18		14					230	265	26
Dec-18		22					229	561	20
Jan-19		28					228	879	16
Feb-19		31					228	1,138	15
Mar-19		31					228	1,137	13
Apr-19		27					229	972	13
May-19		22					230	705	12
Jun-19		16					231	374	13
Jul-19		12					232	141	15
Aug-19		10					232	29	19
Sep-19		8					232	8	24
Oct-19		10					231	62	26
Nov-19		14					230	265	26
Dec-19		21					229	561	20
Jan-20		27					229	879	16
Feb-20		31					228	1,138	15
Mar-20		31					228	1,137	13
Apr-20		27					229	972	14
May-20		23					229	705	12
Jun-20		17					230	374	13
Jul-20		13					231	141	15
Aug-20		10					231	29	19
Sep-20		8					231	8	24
Oct-20		9					230	62	26
Nov-20		13					229	265	26
Dec-20		20					229	561	21
Jan-21		27					228	879	16
Feb-21		31					228	1,138	15
Mar-21		31					228	1,137	13
Apr-21		27					228	972	14
May-21		23					228	705	13
Jun-21		18					229	374	13
Jul-21		13					229	141	15
Aug-21		10					230	29	19
Sep-21		8					229	8	25
Oct-21		9					229	62	26
Nov-21		12					229	265	26
Dec-21		19					228	561	21
Jan-22		26					228	879	16
Feb-22		30					227	1,138	15
Mar-22		31					227	1,137	13
Apr-22		27					227	972	14
May-22		23					228	705	13
Jun-22		18					228	374	13
Jul-22		14					228	141	15
Aug-22		10					229	29	20
Sep-22		8					229	8	25
Oct-22		9					228	62	27
Nov-22		12					228	265	27
Dec-22		19					228	561	21

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month		Independent Variable			
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD_1	EE	DT
Aug-10	38,982	51,723	(12,741)	-24.63%	(1.74)			19	367	18,475
Sep-10	42,716	34,941	7,775	22.25%	1.06			2	367	18,506
Oct-10	48,741	51,121	(2,380)	-4.65%	(0.32)			39	368	18,536
Nov-10	66,358	63,762	2,596	4.07%	0.35			261	368	18,567
Dec-10	97,415	91,915	5,500	5.98%	0.75			584	368	18,597
Jan-11	117,867	125,557	(7,690)	-6.12%	(1.05)			924	369	18,628
Feb-11	118,786	133,591	(14,804)	-11.08%	(2.02)			1,234	369	18,659
Mar-11	105,222	115,820	(10,597)	-9.15%	(1.45)			1,220	369	18,687
Apr-11	94,133	89,023	5,110	5.74%	0.70			1,006	370	18,718
May-11	73,287	77,716	(4,429)	-5.70%	(0.60)			710	370	18,748
Jun-11	55,791	51,314	4,477	8.73%	0.61			364	371	18,779
Jul-11	48,591	45,457	3,134	6.89%	0.43	907,890	931,938	150	371	18,809
Aug-11	39,262	49,019	(9,757)	-19.90%	(1.33)	908,170	929,234	39	371	18,840
Sep-11	40,587	35,996	4,591	12.75%	0.63	906,041	930,289	1	372	18,871
Oct-11	46,634	48,252	(1,618)	-3.35%	(0.22)	903,934	927,421	37	372	18,901
Nov-11	71,537	63,092	8,445	13.39%	1.15	909,113	926,751	245	372	18,932
Dec-11	94,740	88,434	6,306	7.13%	0.86	906,438	923,270	500	372	18,962
Jan-12	121,950	110,819	11,131	10.04%	1.52	910,521	908,532	752	373	18,993
Feb-12	121,031	131,547	(10,516)	-7.99%	(1.43)	912,765	906,488	1,016	373	19,024
Mar-12	119,276	112,140	7,136	6.36%	0.97	926,819	902,809	1,013	373	19,053
Apr-12	88,689	93,012	(4,323)	-4.65%	(0.59)	921,375	906,798	784	373	19,084
May-12	76,795	69,483	7,312	10.52%	1.00	924,883	898,565	543	373	19,114
Jun-12	58,156	49,632	8,524	17.17%	1.16	927,248	896,883	294	374	19,145
Jul-12	42,464	50,639	(8,175)	-16.14%	(1.12)	921,121	902,066	116	374	19,175
Aug-12	37,225	37,241	(16)	-0.04%	(0.00)	919,084	890,288	39	374	19,206
Sep-12	36,705	34,594	2,111	6.10%	0.29	915,202	888,887	-	374	19,237
Oct-12	47,056	44,262	2,794	6.31%	0.38	915,625	884,896	63	374	19,267
Nov-12	61,199	61,700	(501)	-0.81%	(0.07)	905,286	883,505	229	375	19,298
Dec-12	97,292	92,113	5,179	5.62%	0.71	907,839	887,184	564	375	19,328
Jan-13	126,722	120,289	6,433	5.35%	0.88	912,611	896,654	884	375	19,359
Feb-13	129,556	134,655	(5,099)	-3.79%	(0.70)	921,136	899,762	1,071	375	19,390
Mar-13	118,619	122,186	(3,567)	-2.92%	(0.49)	920,479	909,807	1,095	376	19,418
Apr-13	99,945	102,750	(2,804)	-2.73%	(0.38)	931,735	919,545	955	376	19,449
May-13	75,653	78,792	(3,139)	-3.98%	(0.43)	930,593	928,854	695	376	19,479
Jun-13	57,627	47,502	10,125	21.32%	1.38	930,064	926,724	355	376	19,510
Jul-13	42,837	42,568	269	0.63%	0.04	930,437	918,653	125	377	19,540
Aug-13	36,279	38,853	(2,574)	-6.62%	(0.35)	929,491	920,264	20	377	19,571
Sep-13	39,952	34,049	5,903	17.34%	0.81	932,738	919,719	1	377	19,602
Oct-13	44,028	47,687	(3,659)	-7.67%	(0.50)	929,710	923,144	70	378	19,632
Nov-13	68,739	57,761	10,977	19.00%	1.50	937,250	919,205	260	378	19,663
Dec-13	112,422	95,955	16,467	17.16%	2.25	952,380	923,047	592	378	19,693
Jan-14	148,186	142,046	6,140	4.32%	0.84	973,844	944,804	979	379	19,724
Feb-14	144,349	149,571	(5,222)	-3.49%	(0.71)	988,637	959,720	1,226	379	19,755
Mar-14	125,973	133,641	(7,668)	-5.74%	(1.05)	995,990	971,175	1,217	379	19,783
Apr-14	122,267	102,903	19,364	18.82%	2.64	1,018,312	971,328	1,108	380	19,814
May-14	84,225	95,040	(10,815)	-11.38%	(1.48)	1,026,884	987,576	809	380	19,844
Jun-14	62,632	46,267	16,365	35.37%	2.23	1,031,889	986,341	377	381	19,875
Jul-14	40,827	40,868	(42)	-0.10%	(0.01)	1,029,879	984,641	120	381	19,905
Aug-14	36,174	37,100	(926)	-2.50%	(0.13)	1,029,774	982,888	13	381	19,936
Sep-14	33,585	30,807	2,778	9.02%	0.38	1,023,407	979,647	4	381	19,967
Oct-14	34,331	38,719	(4,389)	-11.33%	(0.60)	1,013,710	970,679	70	382	19,997
Nov-14	46,238	48,269	(2,032)	-4.21%	(0.28)	991,209	961,187	239	382	20,028
Dec-14	71,408	74,367	(2,959)	-3.98%	(0.40)	950,195	939,599	560	382	20,058
Jan-15	88,690	95,012	(6,322)	-6.65%	(0.86)	890,698	892,565	873	382	20,089
Feb-15	89,077	100,671	(11,595)	-11.52%	(1.58)	835,426	843,666	1,158	382	20,120
Mar-15	85,236	98,821	(13,586)	-13.75%	(1.85)	794,689	808,846	1,366	382	20,148
Apr-15	77,249	78,976	(1,727)	-2.19%	(0.24)	749,671	784,918	1,231	383	20,179
May-15	72,644	61,766	10,878	17.61%	1.48	738,090	751,644	799	383	20,209
Jun-15	39,339	54,886	(15,547)	-28.33%	(2.12)	714,797	760,264	328	383	20,240
Jul-15	40,584	35,122	5,462	15.55%	0.75	714,554	754,518	103	383	20,270
Aug-15	29,513	37,106	(7,593)	-20.46%	(1.04)	707,893	754,524	37	383	20,301
Sep-15	27,802	30,026	(2,224)	-7.41%	(0.30)	702,110	753,743	1	383	20,332
Oct-15	32,408	26,691	5,717	21.42%	0.78	700,187	741,715	29	383	20,362
Nov-15	48,904	45,613	3,292	7.22%	0.45	702,853	739,058	246	383	20,393
Dec-15	76,286	69,727	6,559	9.41%	0.89	707,732	734,419	509	383	20,423
Jan-16	87,393	86,904	490	0.56%	0.07	706,435	726,310	671	383	20,454
Feb-16	93,910	91,785	2,125	2.31%	0.29	711,268	717,424	932	383	20,485
Mar-16	95,154	90,122	5,032	5.58%	0.69	721,187	708,725	1,039	383	20,514
Apr-16	73,103	81,874	(8,771)	-10.71%	(1.20)	717,041	711,623	848	383	20,545
May-16	54,684	56,801	(2,116)	-3.73%	(0.29)	699,081	706,658	637	384	20,575
Jun-16	43,291	41,398	1,894	4.58%	0.26	703,034	693,169	383	384	20,606
Jul-16	33,890	31,993	1,897	5.93%	0.26	696,339	690,040	124	384	20,636
Aug-16	27,217	29,098	(1,881)	-6.46%	(0.26)	694,043	682,031	20	384	20,667
Sep-16	26,474	26,238	236	0.90%	0.03	692,715	678,243	4	384	20,698
Oct-16	33,960	30,880	3,080	9.97%	0.42	694,267	682,432	37	384	20,728
Nov-16	48,105	47,125	980	2.08%	0.13	693,468	683,944	237	384	20,759
Dec-16	75,653	70,516	5,137	7.28%	0.70	692,834	684,733	524	385	20,789
Jan-17	98,019	95,270	2,749	2.89%	0.38	703,460	693,100	859	385	20,820
Feb-17	105,052	104,172	879	0.84%	0.12	714,602	705,487	1,057	385	20,851
Mar-17	77,997	90,604	(12,607)	-13.91%	(1.72)	697,444	705,968	957	385	20,879
Apr-17	71,748	69,584	2,164	3.11%	0.30	696,090	693,679	958	386	20,910
May-17		55,884					692,762	733	386	20,940
Jun-17		32,744					684,109	211	386	20,971
Jul-17		31,037					683,152	141	387	21,001

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month		Independent Variable			
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD_1	EE	DT
Aug-17		26,866					680,920	29	387	21,032
Sep-17		26,328					681,010	8	387	21,063
Oct-17		32,139					682,269	62	387	21,093
Nov-17		45,227					680,371	265	388	21,124
Dec-17		66,687					676,542	561	388	21,154
Jan-18		86,305					667,577	879	388	21,185
Feb-18		93,548					656,952	1,138	389	21,216
Mar-18		89,322					655,671	1,137	389	21,244
Apr-18		74,935					661,021	972	389	21,275
May-18		60,251					665,388	705	389	21,305
Jun-18		43,880					676,524	374	390	21,336
Jul-18		33,401					678,888	141	390	21,366
Aug-18		27,202					679,225	29	390	21,397
Sep-18		25,064					677,961	8	390	21,428
Oct-18		29,838					675,660	62	391	21,458
Nov-18		41,647					672,080	265	391	21,489
Dec-18		62,200					667,592	561	391	21,519
Jan-19		80,472					661,759	879	391	21,550
Feb-19		89,688					657,899	1,138	392	21,581
Mar-19		87,376					655,953	1,137	392	21,609
Apr-19		75,707					656,725	972	392	21,640
May-19		62,374					658,848	705	392	21,670
Jun-19		46,348					661,316	374	393	21,701
Jul-19		34,986					662,902	141	393	21,731
Aug-19		27,326					663,025	29	393	21,762
Sep-19		23,642					661,604	8	393	21,793
Oct-19		27,077					658,843	62	394	21,823
Nov-19		37,915					655,111	265	394	21,854
Dec-19		57,744					650,656	561	394	21,884
Jan-20		76,087					646,271	879	394	21,915
Feb-20		86,030					642,613	1,138	395	21,946
Mar-20		85,096					640,333	1,137	395	21,975
Apr-20		74,913					639,539	972	395	22,006
May-20		62,716					639,881	705	395	22,036
Jun-20		47,231					640,763	374	395	22,067
Jul-20		35,652					641,428	141	396	22,097
Aug-20		27,210					641,313	29	396	22,128
Sep-20		22,492					640,163	8	396	22,159
Oct-20		24,885					637,971	62	396	22,189
Nov-20		34,806					634,861	265	397	22,220
Dec-20		53,969					631,086	561	397	22,250
Jan-21		72,100					627,100	879	397	22,281
Feb-21		82,375					623,444	1,138	397	22,312
Mar-21		82,349					620,698	1,137	397	22,340
Apr-21		73,233					619,018	972	398	22,371
May-21		61,940					618,242	705	398	22,401
Jun-21		47,080					618,092	374	398	22,432
Jul-21		35,602					618,042	141	398	22,462
Aug-21		26,834					617,666	29	398	22,493
Sep-21		21,530					616,703	8	399	22,524
Oct-21		23,191					615,009	62	399	22,554
Nov-21		32,366					612,569	265	399	22,585
Dec-21		50,850					609,451	561	399	22,615
Jan-22		68,651					606,002	879	399	22,646
Feb-22		79,057					602,684	1,138	400	22,677
Mar-22		79,659					599,994	1,137	400	22,705
Apr-22		71,372					598,133	972	400	22,736
May-22		60,823					597,016	705	400	22,766
Jun-22		46,554					596,490	374	401	22,797
Jul-22		35,286					596,174	141	401	22,827
Aug-22		26,413					595,754	29	401	22,858
Sep-22		20,783					595,007	8	401	22,889
Oct-22		21,951					593,767	62	402	22,919
Nov-22		30,546					591,947	265	402	22,950
Dec-22		48,412					589,508	561	402	22,980

Modeling Results
Liberty Utilities
Residential Non-Heating Sales Volumes

Actual, Projected, Residual (Therms)						Rolling 12-Month		Independent Variable			
Plan Year	Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD_1	EE	DT
									BDD_1	EE	DT
PY2011		903,934	927,421						6,527	4,439	224,804
PY2012		915,625	884,896						5,362	4,480	229,192
PY2013		929,710	923,144						6,060	4,512	233,576
PY2014		1,013,710	970,679						6,772	4,559	237,956
PY2015		700,187	741,715						6,720	4,591	242,336
PY2016		694,267	682,432						5,447	4,603	246,724
PY2017			682,269						5,776	4,630	251,108
PY2018			675,660						6,272	4,671	255,488
PY2019			658,843						6,272	4,707	259,868
PY2020			637,971						6,272	4,741	264,256
PY2021			615,009						6,272	4,772	268,640
PY2022			593,767						6,272	4,804	273,020
Growth											
PY2012		11,690	(42,524)						(1,165)	40	4,388
PY2013		14,086	38,248						698	32	4,384
PY2014		84,000	47,534						712	47	4,380
PY2015		(313,523)	(228,964)						(52)	32	4,380
PY2016		(5,920)	(59,283)						(1,273)	12	4,388
PY2017			(164)						329	28	4,384
PY2018			(6,609)						497	40	4,380
PY2019			(16,817)						-	37	4,380
PY2020			(20,871)						-	34	4,388
PY2021			(22,962)						-	30	4,384
PY2022			(21,242)						-	32	4,380
Growth Rate (%)											
PY2012		1.3%	-4.6%						-17.8%	0.9%	2.0%
PY2013		1.5%	4.3%						13.0%	0.7%	1.9%
PY2014		9.0%	5.1%						11.7%	1.0%	1.9%
PY2015		-30.9%	-23.6%						-0.8%	0.7%	1.8%
PY2016		-0.8%	-8.0%						-18.9%	0.3%	1.8%
PY2017			0.0%						6.0%	0.6%	1.8%
PY2018			-1.0%						8.6%	0.9%	1.7%
PY2019			-2.5%						0.0%	0.8%	1.7%
PY2020			-3.2%						0.0%	0.7%	1.7%
PY2021			-3.6%						0.0%	0.6%	1.7%
PY2022			-3.5%						0.0%	0.7%	1.6%

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Customers

Dependent Variable: CHF_CUS
Method: AutoReg
Observations: 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
Intercept	1	(2306.66)	873.17	(2.64)	0.01
EE	1	14.23	5.89	2.41	0.02
DT	1	0.25	0.10	2.37	0.02
dm1	1	820.51	83.17	9.87	0.00
dm2	1	617.82	72.18	8.56	0.00
dm3	1	291.50	66.94	4.35	0.00
dm4	1	429.83	72.14	5.96	0.00
dm5	1	660.62	82.63	7.99	0.00
dm6	1	503.83	81.42	6.19	0.00
dm12	1	462.04	77.40	5.97	0.00
AR1	1	(0.54)	0.09	(5.77)	0.00
AR3	1	0.50	0.09	5.48	0.00
AR4	1	(0.34)	0.09	(4.01)	0.00
AR6	1	0.63	0.08	7.64	0.00
AR7	1	(0.60)	0.09	(6.54)	0.00
AR9	1	0.31	0.10	3.05	0.00

<u>Model Fitness:</u>	
Regress R-Square	0.9092
Total R-Square	0.9399
SSE	1240575.29
MSE	17230.21
SBC	1167.78
MAE	85.83
MAPE	0.90
Durbin-Watson	1.83
Root MSE	131.26
AIC	1128.14
AICC	1135.80
HQC	1144.11

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Customers

Actual, Projected, Residual						Rolling 12-Month		Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	EE	DT
Aug-10	8,968	8,855	114	1.29%	0.95			454.0725	18,475
Sep-10	8,716	8,776	(60)	-0.68%	(0.50)			454.3101	18,506
Oct-10	8,693	8,685	8	0.09%	0.07			454.5329	18,536
Nov-10	8,886	8,820	66	0.75%	0.55			454.7449	18,567
Dec-10	9,216	9,231	(15)	-0.16%	(0.12)			454.95	18,597
Jan-11	9,329	9,357	(27)	-0.29%	(0.23)			455.1553	18,628
Feb-11	9,265	9,304	(40)	-0.43%	(0.33)			455.3514	18,659
Mar-11	9,244	9,259	(16)	-0.17%	(0.13)			455.5521	18,687
Apr-11	9,317	9,368	(51)	-0.54%	(0.42)			455.7678	18,718
May-11	9,261	9,297	(36)	-0.38%	(0.30)			455.9959	18,748
Jun-11	9,163	9,166	(3)	-0.04%	(0.03)			456.2403	18,779
Jul-11	9,055	8,924	131	1.46%	1.09	9,093	9,087	456.5047	18,809
Aug-11	8,995	8,977	18	0.20%	0.15	9,095	9,097	456.7951	18,840
Sep-11	8,858	8,758	100	1.14%	0.83	9,107	9,096	457.1006	18,871
Oct-11	8,827	8,818	9	0.10%	0.08	9,118	9,107	457.4243	18,901
Nov-11	9,044	9,078	(35)	-0.38%	(0.29)	9,131	9,128	457.7641	18,932
Dec-11	9,348	9,414	(66)	-0.70%	(0.55)	9,142	9,143	458.1186	18,962
Jan-12	9,423	9,472	(49)	-0.51%	(0.41)	9,150	9,153	458.4919	18,993
Feb-12	9,481	9,372	109	1.17%	0.91	9,168	9,159	458.8639	19,024
Mar-12	9,413	9,384	29	0.31%	0.24	9,182	9,169	459.2452	19,053
Apr-12	9,542	9,578	(36)	-0.38%	(0.30)	9,201	9,187	459.6402	19,084
May-12	9,483	9,452	31	0.33%	0.26	9,219	9,199	460.0412	19,114
Jun-12	9,297	9,383	(86)	-0.92%	(0.72)	9,230	9,217	460.4463	19,145
Jul-12	9,266	9,063	203	2.24%	1.69	9,248	9,229	460.854	19,175
Aug-12	9,074	9,071	3	0.03%	0.02	9,255	9,237	461.2698	19,206
Sep-12	8,980	8,936	44	0.49%	0.37	9,265	9,252	461.6802	19,237
Oct-12	8,775	8,901	(126)	-1.41%	(1.05)	9,260	9,259	462.0917	19,267
Nov-12	9,058	9,157	(99)	-1.08%	(0.82)	9,262	9,265	462.504	19,298
Dec-12	9,539	9,532	7	0.07%	0.06	9,278	9,275	462.9171	19,328
Jan-13	9,786	9,669	118	1.22%	0.98	9,308	9,291	463.3374	19,359
Feb-13	9,659	9,703	(44)	-0.45%	(0.36)	9,323	9,319	463.7376	19,390
Mar-13	9,473	9,469	4	0.04%	0.03	9,328	9,326	464.1381	19,418
Apr-13	9,549	9,687	(138)	-1.42%	(1.15)	9,328	9,335	464.552	19,449
May-13	9,578	9,578	(1)	-0.01%	(0.01)	9,336	9,346	464.9657	19,479
Jun-13	9,443	9,466	(24)	-0.25%	(0.20)	9,348	9,353	465.379	19,510
Jul-13	9,343	9,210	132	1.44%	1.10	9,355	9,365	465.7918	19,540
Aug-13	9,321	9,322	(0)	0.00%	(0.00)	9,375	9,386	466.2127	19,571
Sep-13	9,112	9,193	(81)	-0.88%	(0.67)	9,386	9,407	466.6319	19,602
Oct-13	9,004	9,057	(52)	-0.57%	(0.43)	9,405	9,420	467.0602	19,632
Nov-13	9,192	9,228	(36)	-0.39%	(0.30)	9,417	9,426	467.5012	19,663
Dec-13	9,690	9,723	(34)	-0.35%	(0.28)	9,429	9,442	467.9591	19,693
Jan-14	9,742	9,872	(130)	-1.32%	(1.08)	9,426	9,459	468.4458	19,724
Feb-14	9,403	9,705	(302)	-3.12%	(2.52)	9,404	9,459	468.9322	19,755
Mar-14	9,562	9,477	84	0.89%	0.70	9,412	9,460	469.4458	19,783
Apr-14	9,891	9,877	14	0.14%	0.12	9,440	9,476	470.0082	19,814
May-14	10,174	10,012	162	1.62%	1.35	9,490	9,512	470.6069	19,844
Jun-14	9,793	9,766	27	0.28%	0.22	9,519	9,537	471.2455	19,875
Jul-14	9,617	9,475	142	1.50%	1.19	9,542	9,559	471.928	19,905
Aug-14	9,113	9,553	(441)	-4.61%	(3.67)	9,524	9,578	472.6654	19,936
Sep-14	8,780	9,025	(244)	-2.71%	(2.03)	9,497	9,564	473.4286	19,967
Oct-14	8,962	8,886	76	0.86%	0.63	9,493	9,550	474.2234	19,997
Nov-14	9,319	9,488	(169)	-1.78%	(1.41)	9,504	9,572	475.0437	20,028
Dec-14	10,283	10,179	104	1.02%	0.87	9,553	9,610	475.8838	20,058
Jan-15	10,117	10,224	(107)	-1.05%	(0.89)	9,585	9,639	476.7517	20,089
Feb-15	10,523	10,138	384	3.79%	3.20	9,678	9,675	477.5851	20,120
Mar-15	10,083	10,009	73	0.73%	0.61	9,721	9,719	478.4205	20,148
Apr-15	10,253	10,122	131	1.30%	1.09	9,751	9,740	479.2807	20,179
May-15	10,086	9,945	142	1.43%	1.18	9,744	9,734	480.1312	20,209
Jun-15	10,092	9,853	239	2.42%	1.99	9,769	9,741	480.9664	20,240
Jul-15	9,905	9,978	(74)	-0.74%	(0.61)	9,793	9,783	481.7804	20,270
Aug-15	9,756	9,568	188	1.96%	1.56	9,847	9,785	482.5852	20,301
Sep-15	9,513	9,572	(59)	-0.61%	(0.49)	9,908	9,830	483.3581	20,332
Oct-15	9,444	9,428	16	0.17%	0.14	9,948	9,875	484.1163	20,362
Nov-15	9,665	9,675	(10)	-0.11%	(0.09)	9,977	9,891	484.8638	20,393
Dec-15	10,182	10,037	145	1.45%	1.21	9,968	9,879	485.6044	20,423
Jan-16	10,365	10,281	84	0.82%	0.70	9,989	9,884	486.3543	20,454
Feb-16	10,237	10,274	(37)	-0.36%	(0.31)	9,965	9,895	487.0812	20,485
Mar-16	10,073	10,067	6	0.06%	0.05	9,964	9,900	487.813	20,514
Apr-16	10,216	10,219	(3)	-0.03%	(0.02)	9,961	9,908	488.5659	20,545
May-16	10,315	10,237	78	0.76%	0.65	9,980	9,932	489.3319	20,575
Jun-16	10,274	10,142	132	1.30%	1.10	9,995	9,957	490.1147	20,606
Jul-16	9,975	9,939	37	0.37%	0.31	10,001	9,953	490.9181	20,636
Aug-16	9,760	9,915	(155)	-1.56%	(1.29)	10,002	9,982	491.7548	20,667
Sep-16	9,632	9,638	(6)	-0.06%	(0.05)	10,012	9,988	492.5926	20,698
Oct-16	9,632	9,673	(42)	-0.43%	(0.35)	10,027	10,008	493.439	20,728
Nov-16	10,029	9,932	97	0.98%	0.81	10,058	10,030	494.2882	20,759
Dec-16	10,222	10,416	(194)	-1.86%	(1.61)	10,061	10,061	495.1344	20,789
Jan-17	10,341	10,541	(199)	-1.89%	(1.66)	10,059	10,083	495.9856	20,820

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Customers

<u>Actual, Projected, Residual</u>						Rolling 12-Month		<u>Independent Variable</u>	
<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>Project Error %</u>	<u>Standard Residual</u>	<u>Actual R12</u>	<u>Projected R12</u>	<u>EE</u>	<u>DT</u>
Feb-17	10,278	10,329	(50)	-0.49%	(0.42)	10,062	10,087	496.7819	20,851
Mar-17	10,267	10,281	(14)	-0.14%	(0.12)	10,078	10,105	497.559	20,879
Apr-17	10,464	10,496	(32)	-0.31%	(0.27)	10,099	10,128	498.3373	20,910
May-17		10,439					10,145	499.0839	20,940
Jun-17		10,500					10,175	499.7935	20,971
Jul-17		10,200					10,197	500.4602	21,001
Aug-17		10,120					10,214	501.0935	21,032
Sep-17		9,863					10,232	501.6772	21,063
Oct-17		9,939					10,255	502.2265	21,093
Nov-17		10,259					10,282	502.7464	21,124
Dec-17		10,621					10,299	503.2414	21,154
Jan-18		10,799					10,320	503.7243	21,185
Feb-18		10,630					10,346	504.1693	21,216
Mar-18		10,542					10,367	504.6044	21,244
Apr-18		10,616					10,377	505.0487	21,275
May-18		10,614					10,392	505.4919	21,305
Jun-18		10,570					10,398	505.939	21,336
Jul-18		10,287					10,405	506.3943	21,366
Aug-18		10,286					10,419	506.8672	21,397
Sep-18		10,063					10,436	507.3406	21,428
Oct-18		10,124					10,451	507.82	21,458
Nov-18		10,345					10,458	508.3031	21,489
Dec-18		10,766					10,470	508.788	21,519
Jan-19		10,958					10,484	509.2804	21,550
Feb-19		10,794					10,497	509.7466	21,581
Mar-19		10,703					10,511	510.2084	21,609
Apr-19		10,812					10,527	510.6794	21,640
May-19		10,861					10,548	511.1416	21,670
Jun-19		10,742					10,562	511.5931	21,701
Jul-19		10,429					10,574	512.0315	21,731
Aug-19		10,434					10,586	512.4615	21,762
Sep-19		10,255					10,602	512.8669	21,793
Oct-19		10,300					10,617	513.252	21,823
Nov-19		10,485					10,628	513.6146	21,854
Dec-19		10,945					10,643	513.9521	21,884
Jan-20		11,142					10,658	514.2671	21,915
Feb-20		10,954					10,672	514.5427	21,946
Mar-20		10,814					10,681	514.7867	21,975
Apr-20		10,951					10,693	515.0006	22,006
May-20		11,037					10,707	515.1772	22,036
Jun-20		10,890					10,720	515.3144	22,067
Jul-20		10,554					10,730	515.4097	22,097
Aug-20		10,562					10,741	515.4672	22,128
Sep-20		10,411					10,754	515.4934	22,159
Oct-20		10,421					10,764	515.4979	22,189
Nov-20		10,573					10,771	515.4899	22,220
Dec-20		11,053					10,780	515.4779	22,250
Jan-21		11,273					10,791	515.4706	22,281
Feb-21		11,070					10,801	515.4766	22,312
Mar-21		10,891					10,807	515.5038	22,340
Apr-21		11,045					10,815	515.5618	22,371
May-21		11,152					10,825	515.6595	22,401
Jun-21		10,990					10,833	515.8052	22,432
Jul-21		10,630					10,839	516.0077	22,462
Aug-21		10,656					10,847	516.2734	22,493
Sep-21		10,541					10,858	516.5894	22,524
Oct-21		10,538					10,868	516.9547	22,554
Nov-21		10,672					10,876	517.3638	22,585
Dec-21		11,168					10,885	517.8119	22,615
Jan-22		11,420					10,898	518.3018	22,646
Feb-22		11,214					10,910	518.7953	22,677
Mar-22		11,016					10,920	519.3112	22,705
Apr-22		11,192					10,932	519.8627	22,736
May-22		11,328					10,947	520.4278	22,766
Jun-22		11,162					10,961	521.0014	22,797
Jul-22		10,782					10,974	521.5783	22,827
Aug-22		10,822					10,988	522.164	22,858
Sep-22		10,735					11,004	522.7362	22,889
Oct-22		10,724					11,019	523.3013	22,919
Nov-22		10,840					11,033	523.8564	22,950
Dec-22		11,344					11,048	524.3983	22,980

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Use per Customer

Dependent Variable: CHF_UPC
Method: AutoReg
Observations: 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
Intercept	1	91.12	19.70	4.63	0.00
BDD_1	1	0.75	0.03	29.24	0.00
dm1	1	227.57	23.50	9.69	0.00
dm2	1	93.04	20.50	4.54	0.00
dm4	1	(125.77)	19.63	(6.41)	0.00
dm5	1	(183.87)	22.91	(8.03)	0.00
dm6	1	(106.25)	20.35	(5.22)	0.00
dm11	1	57.73	19.37	2.98	0.00
dm12	1	149.27	22.92	6.51	0.00
AR1	1	(0.62)	0.10	(6.54)	0.00

Model Fitness:

Regress R-Square	0.9482
Total R-Square	0.9823
SSE	176,792.01
MSE	2,490.03
SBC	897.06
MAE	36.29
MAPE	11.78
Durbin-Watson	2.25
Root MSE	49.90
AIC	873.11
AICC	876.26
HQC	882.72

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Use per Customer

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month		Independent Variable
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD_1
Aug-10	86	105	(19)	-18.08%	(0.40)			19
Sep-10	97	80	17	21.00%	0.36			2
Oct-10	133	123	10	7.93%	0.21			39
Nov-10	334	352	(17)	-4.94%	(0.37)			261
Dec-10	610	671	(62)	-9.19%	(1.31)			584
Jan-11	958	967	(10)	-0.99%	(0.20)			924
Feb-11	1,054	1,075	(21)	-1.95%	(0.44)			1,234
Mar-11	947	970	(23)	-2.39%	(0.49)			1,220
Apr-11	729	682	47	6.84%	0.99			1,006
May-11	379	445	(66)	-14.83%	(1.40)			710
Jun-11	184	220	(36)	-16.29%	(0.76)			364
Jul-11	120	158	(37)	-23.68%	(0.79)	5,631	5,848	150
Aug-11	88	68	19	28.45%	0.41	5,632	5,811	39
Sep-11	106	72	35	48.21%	0.74	5,641	5,803	1
Oct-11	122	128	(6)	-4.71%	(0.13)	5,630	5,807	37
Nov-11	361	334	28	8.25%	0.59	5,657	5,789	245
Dec-11	608	633	(25)	-3.91%	(0.53)	5,655	5,751	500
Jan-12	941	877	64	7.30%	1.36	5,638	5,660	752
Feb-12	978	981	(3)	-0.32%	(0.07)	5,563	5,567	1,016
Mar-12	964	870	95	10.88%	2.01	5,580	5,466	1,013
Apr-12	609	624	(15)	-2.33%	(0.31)	5,461	5,408	784
May-12	392	349	43	12.20%	0.91	5,473	5,312	543
Jun-12	215	253	(39)	-15.27%	(0.82)	5,504	5,345	294
Jul-12	113	184	(71)	-38.72%	(1.52)	5,496	5,372	116
Aug-12	94	80	15	18.42%	0.31	5,503	5,384	39
Sep-12	104	75	29	38.83%	0.62	5,501	5,387	-
Oct-12	159	146	13	9.02%	0.28	5,538	5,405	63
Nov-12	297	333	(36)	-10.83%	(0.77)	5,474	5,405	229
Dec-12	684	648	36	5.58%	0.77	5,550	5,420	564
Jan-13	931	993	(62)	-6.24%	(1.32)	5,540	5,535	884
Feb-13	1,077	954	122	12.82%	2.60	5,639	5,509	1,071
Mar-13	920	967	(47)	-4.85%	(1.00)	5,595	5,606	1,095
Apr-13	703	686	17	2.45%	0.36	5,688	5,668	955
May-13	379	441	(63)	-14.23%	(1.34)	5,675	5,761	695
Jun-13	194	220	(26)	-11.82%	(0.55)	5,654	5,727	355
Jul-13	113	149	(36)	-24.00%	(0.76)	5,655	5,692	125
Aug-13	94	62	32	51.65%	0.68	5,654	5,674	20
Sep-13	98	84	14	16.09%	0.29	5,648	5,684	1
Oct-13	150	147	3	2.26%	0.07	5,639	5,684	70
Nov-13	319	348	(28)	-8.18%	(0.60)	5,661	5,699	260
Dec-13	681	668	13	1.92%	0.27	5,658	5,719	592
Jan-14	1,012	1,049	(37)	-3.53%	(0.79)	5,739	5,775	979
Feb-14	1,020	1,076	(56)	-5.24%	(1.20)	5,683	5,898	1,226
Mar-14	896	950	(54)	-5.70%	(1.15)	5,659	5,881	1,217
Apr-14	774	729	45	6.19%	0.96	5,730	5,924	1,108
May-14	464	500	(36)	-7.19%	(0.76)	5,815	5,982	809
Jun-14	250	237	14	5.76%	0.29	5,871	5,998	377
Jul-14	154	170	(16)	-9.64%	(0.35)	5,911	6,019	120
Aug-14	153	84	69	82.14%	1.46	5,970	6,041	13
Sep-14	146	126	20	15.73%	0.42	6,018	6,083	4
Oct-14	150	176	(26)	-14.66%	(0.55)	6,019	6,113	70
Nov-14	338	331	6	1.89%	0.13	6,037	6,096	239
Dec-14	624	665	(41)	-6.14%	(0.87)	5,981	6,094	560
Jan-15	957	950	7	0.70%	0.14	5,925	5,995	873
Feb-15	893	1,040	(148)	-14.18%	(3.14)	5,798	5,959	1,158
Mar-15	1,048	1,014	34	3.35%	0.72	5,950	6,022	1,366
Apr-15	690	846	(156)	-18.42%	(3.31)	5,866	6,140	1,231
May-15	448	382	66	17.21%	1.40	5,851	6,022	799
Jun-15	232	195	37	19.23%	0.80	5,832	5,980	328
Jul-15	153	170	(16)	-9.51%	(0.34)	5,832	5,980	103
Aug-15	118	110	9	8.02%	0.19	5,798	6,006	37
Sep-15	101	91	10	11.18%	0.22	5,753	5,971	1
Oct-15	135	119	16	13.74%	0.35	5,738	5,913	29
Nov-15	372	346	26	7.48%	0.55	5,773	5,928	246
Dec-15	716	646	71	10.94%	1.50	5,864	5,908	509
Jan-16	905	880	25	2.86%	0.53	5,813	5,838	671
Feb-16	1,026	934	93	9.91%	1.97	5,946	5,732	932
Mar-16	994	958	36	3.72%	0.76	5,892	5,676	1,039
Apr-16	673	678	(5)	-0.75%	(0.11)	5,875	5,508	848
May-16	407	429	(22)	-5.09%	(0.46)	5,835	5,555	637
Jun-16	210	286	(76)	-26.62%	(1.62)	5,813	5,647	383
Jul-16	121	146	(24)	-16.75%	(0.52)	5,781	5,623	124
Aug-16	95	67	28	42.10%	0.60	5,757	5,580	20
Sep-16	83	87	(5)	-5.48%	(0.10)	5,739	5,577	4
Oct-16	135	111	24	21.38%	0.51	5,739	5,569	37
Nov-16	369	336	32	9.54%	0.68	5,735	5,559	237
Dec-16	682	659	24	3.61%	0.51	5,701	5,572	524
Jan-17	1,031	992	39	3.89%	0.82	5,827	5,684	859

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Use per Customer

<u>Actual, Projected, Residual (Therms/ Customer)</u>						<u>Rolling 12-Month</u>		<u>Independent Variable</u>
<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>Project Error %</u>	<u>Standard Residual</u>	<u>Actual R12</u>	<u>Projected R12</u>	<u>BDD_1</u>
Feb-17	1,072	1,018	54	5.35%	1.16	5,872	5,768	1,057
Mar-17	894	868	26	3.02%	0.56	5,772	5,677	957
Apr-17	754	736	18	2.47%	0.39	5,853	5,735	958
May-17		501					5,806	733
Jun-17		171					5,691	211
Jul-17		215					5,760	141
Aug-17		124					5,817	29
Sep-17		104					5,834	8
Oct-17		142					5,865	62
Nov-17		350					5,878	265
Dec-17		661					5,880	561
Jan-18		977					5,866	879
Feb-18		1,035					5,883	1,138
Mar-18		942					5,957	1,137
Apr-18		693					5,914	972
May-18		435					5,848	705
Jun-18		265					5,942	374
Jul-18		197					5,924	141
Aug-18		113					5,913	29
Sep-18		97					5,906	8
Oct-18		138					5,902	62
Nov-18		347					5,899	265
Dec-18		660					5,897	561
Jan-19		976					5,896	879
Feb-19		1,035					5,896	1,138
Mar-19		941					5,895	1,137
Apr-19		692					5,895	972
May-19		434					5,895	705
Jun-19		264					5,895	374
Jul-19		197					5,895	141
Aug-19		113					5,895	29
Sep-19		97					5,895	8
Oct-19		138					5,895	62
Nov-19		347					5,895	265
Dec-19		660					5,895	561
Jan-20		976					5,895	879
Feb-20		1,035					5,895	1,138
Mar-20		941					5,895	1,137
Apr-20		692					5,895	972
May-20		434					5,895	705
Jun-20		264					5,895	374
Jul-20		197					5,895	141
Aug-20		113					5,895	29
Sep-20		97					5,895	8
Oct-20		138					5,895	62
Nov-20		347					5,895	265
Dec-20		660					5,895	561
Jan-21		976					5,895	879
Feb-21		1,035					5,895	1,138
Mar-21		941					5,895	1,137
Apr-21		692					5,895	972
May-21		434					5,895	705
Jun-21		264					5,895	374
Jul-21		197					5,895	141
Aug-21		113					5,895	29
Sep-21		97					5,895	8
Oct-21		138					5,895	62
Nov-21		347					5,895	265
Dec-21		660					5,895	561
Jan-22		976					5,895	879
Feb-22		1,035					5,895	1,138
Mar-22		941					5,895	1,137
Apr-22		692					5,895	972
May-22		434					5,895	705
Jun-22		264					5,895	374
Jul-22		197					5,895	141
Aug-22		113					5,895	29
Sep-22		97					5,895	8
Oct-22		138					5,895	62
Nov-22		347					5,895	265
Dec-22		660					5,895	561

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month			Independent Variable		
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD_1	EE	DT
Aug-10	773,801	932,572	(158,770)	-17.03%	(0.42)			19	454	18,475
Sep-10	847,466	705,165	142,302	20.18%	0.38			2	454	18,506
Oct-10	1,154,150	1,068,366	85,784	8.03%	0.23			39	455	18,536
Nov-10	2,970,489	3,101,613	(131,124)	-4.23%	(0.35)			261	455	18,567
Dec-10	5,617,633	6,195,914	(578,281)	-9.33%	(1.53)			584	455	18,597
Jan-11	8,936,064	9,051,982	(115,918)	-1.28%	(0.31)			924	455	18,628
Feb-11	9,761,200	9,997,571	(236,371)	-2.36%	(0.63)			1,234	455	18,659
Mar-11	8,749,514	8,978,984	(229,471)	-2.56%	(0.61)			1,220	456	18,687
Apr-11	6,792,317	6,392,273	400,043	6.26%	1.06			1,006	456	18,718
May-11	3,511,873	4,139,419	(627,547)	-15.16%	(1.66)			710	456	18,748
Jun-11	1,686,752	2,015,677	(328,925)	-16.32%	(0.87)			364	456	18,779
Jul-11	1,089,227	1,406,557	(317,330)	-22.56%	(0.84)	51,890,485	53,986,092	150	457	18,809
Aug-11	789,738	613,605	176,133	28.70%	0.47	51,906,422	53,667,126	39	457	18,840
Sep-11	942,972	629,074	313,898	49.90%	0.83	52,001,927	53,591,035	1	457	18,871
Oct-11	1,072,464	1,124,371	(51,908)	-4.62%	(0.14)	51,920,241	53,647,040	37	457	18,901
Nov-11	3,265,807	3,028,365	237,442	7.84%	0.63	52,215,559	53,573,793	245	458	18,932
Dec-11	5,682,492	5,955,366	(272,875)	-4.58%	(0.72)	52,280,418	53,333,246	500	458	18,962
Jan-12	8,867,031	8,306,324	560,708	6.75%	1.48	52,211,386	52,587,587	752	458	18,993
Feb-12	9,270,523	9,193,028	77,495	0.84%	0.21	51,720,709	51,783,044	1,016	459	19,024
Mar-12	9,076,095	8,160,044	916,051	11.23%	2.43	52,047,290	50,964,104	1,013	459	19,053
Apr-12	5,815,062	5,976,438	(161,376)	-2.70%	(0.43)	51,070,035	50,548,269	784	460	19,084
May-12	3,713,365	3,298,635	414,730	12.57%	1.10	51,271,527	49,707,484	543	460	19,114
Jun-12	1,996,349	2,377,923	(381,574)	-16.05%	(1.01)	51,581,124	50,069,730	294	460	19,145
Jul-12	1,046,794	1,670,743	(623,949)	-37.35%	(1.65)	51,538,692	50,333,917	116	461	19,175
Aug-12	857,334	723,762	133,572	18.46%	0.35	51,606,288	50,444,073	39	461	19,206
Sep-12	935,288	670,408	264,881	39.51%	0.70	51,598,605	50,485,408	-	462	19,237
Oct-12	1,396,589	1,299,375	97,214	7.48%	0.26	51,922,730	50,660,411	63	462	19,267
Nov-12	2,689,688	3,049,198	(359,511)	-11.79%	(0.95)	51,346,610	50,681,244	229	463	19,298
Dec-12	6,521,136	6,172,073	349,063	5.66%	0.92	52,185,254	50,897,951	564	463	19,328
Jan-13	9,110,625	9,600,650	(490,024)	-5.10%	(1.30)	52,428,848	52,192,277	884	463	19,359
Feb-13	10,399,907	9,260,189	1,139,718	12.31%	3.02	53,558,232	52,259,438	1,071	464	19,390
Mar-13	8,715,811	9,156,306	(440,495)	-4.81%	(1.17)	53,197,949	53,255,700	1,095	464	19,418
Apr-13	6,711,286	6,645,582	65,704	0.99%	0.17	54,094,173	53,924,844	955	465	19,449
May-13	3,626,967	4,228,832	(601,864)	-14.23%	(1.59)	54,007,776	54,855,040	695	465	19,479
Jun-13	1,830,463	2,081,179	(250,717)	-12.05%	(0.66)	53,841,889	54,558,297	355	465	19,510
Jul-13	1,059,508	1,374,293	(314,786)	-22.91%	(0.83)	53,854,603	54,261,847	125	466	19,540
Aug-13	874,781	576,865	297,916	51.64%	0.79	53,872,050	54,114,951	20	466	19,571
Sep-13	891,017	774,367	116,649	15.06%	0.31	53,827,778	54,218,910	1	467	19,602
Oct-13	1,351,535	1,329,273	22,262	1.67%	0.06	53,782,724	54,248,808	70	467	19,632
Nov-13	2,934,230	3,207,840	(273,610)	-8.53%	(0.72)	54,027,266	54,407,450	260	468	19,663
Dec-13	6,597,201	6,495,328	101,873	1.57%	0.27	54,103,331	54,730,704	592	468	19,693
Jan-14	9,858,260	10,355,666	(497,407)	-4.80%	(1.32)	54,850,966	55,485,721	979	468	19,724
Feb-14	9,591,315	10,447,662	(856,347)	-8.20%	(2.27)	54,042,373	56,673,193	1,226	469	19,755
Mar-14	8,570,163	9,008,232	(438,070)	-4.86%	(1.16)	53,896,725	56,525,119	1,217	469	19,783
Apr-14	7,652,773	7,196,550	456,223	6.34%	1.21	54,838,212	57,076,088	1,108	470	19,814
May-14	4,717,539	5,002,037	(284,498)	-5.69%	(0.75)	55,928,783	57,849,293	809	471	19,844
Jun-14	2,449,597	2,309,726	139,871	6.06%	0.37	56,547,918	58,077,840	377	471	19,875
Jul-14	1,478,224	1,611,641	(133,417)	-8.28%	(0.35)	56,966,634	58,315,188	120	472	19,905
Aug-14	1,390,328	800,243	590,085	73.74%	1.56	57,482,181	58,538,565	13	473	19,936
Sep-14	1,282,881	1,139,390	143,491	12.59%	0.38	57,874,045	58,903,588	4	473	19,967
Oct-14	1,347,265	1,565,224	(217,959)	-13.93%	(0.58)	57,869,776	59,139,539	70	474	19,997
Nov-14	3,147,311	3,144,830	2,481	0.08%	0.01	58,082,857	59,076,529	239	475	20,028
Dec-14	6,421,115	6,772,035	(350,920)	-5.18%	(0.93)	57,906,770	59,353,236	560	476	20,058
Jan-15	9,678,042	9,712,739	(34,697)	-0.36%	(0.09)	57,726,552	58,710,309	873	477	20,089
Feb-15	9,395,152	10,547,804	(1,152,651)	-10.93%	(3.05)	57,530,390	58,810,451	1,158	478	20,120
Mar-15	10,568,848	10,152,067	416,780	4.11%	1.10	59,529,075	59,954,286	1,366	478	20,148
Apr-15	7,075,300	8,561,889	(1,486,589)	-17.36%	(3.94)	58,951,602	61,319,624	1,231	479	20,179
May-15	4,517,855	3,800,235	717,619	18.88%	1.90	58,751,918	60,117,822	799	480	20,209
Jun-15	2,341,048	1,916,984	424,064	22.12%	1.12	58,643,368	59,725,081	328	481	20,240
Jul-15	1,519,502	1,691,632	(172,130)	-10.18%	(0.46)	58,684,646	59,805,071	103	482	20,270
Aug-15	1,154,975	1,048,603	106,372	10.14%	0.28	58,449,293	60,053,432	37	483	20,301
Sep-15	965,088	873,382	91,706	10.50%	0.24	58,131,500	59,787,423	1	483	20,332
Oct-15	1,274,385	1,118,543	155,842	13.93%	0.41	58,058,619	59,340,742	29	484	20,362
Nov-15	3,598,872	3,352,015	246,857	7.36%	0.65	58,510,180	59,547,928	246	485	20,393
Dec-15	7,291,765	6,479,232	812,533	12.54%	2.15	59,380,831	59,255,126	509	486	20,423
Jan-16	9,381,936	9,047,659	334,277	3.69%	0.88	59,084,725	58,590,045	671	486	20,454
Feb-16	10,507,408	9,594,739	912,668	9.51%	2.42	60,196,981	57,636,981	932	487	20,485
Mar-16	10,013,216	9,647,959	365,257	3.79%	0.97	59,641,349	57,132,873	1,039	488	20,514
Apr-16	6,876,996	6,931,177	(54,181)	-0.78%	(0.14)	59,443,045	55,502,161	848	489	20,545
May-16	4,201,751	4,393,673	(191,922)	-4.37%	(0.51)	59,126,941	56,095,599	637	489	20,575
Jun-16	2,155,929	2,900,346	(744,418)	-25.67%	(1.97)	58,941,821	57,078,961	383	490	20,606
Jul-16	1,210,377	1,448,574	(238,197)	-16.44%	(0.63)	58,632,697	56,835,903	124	491	20,636
Aug-16	930,199	665,013	265,186	39.88%	0.70	58,407,920	56,452,313	20	492	20,667
Sep-16	795,570	842,245	(46,675)	-5.54%	(0.12)	58,238,403	56,421,176	4	493	20,698
Oct-16	1,300,286	1,075,912	224,373	20.85%	0.59	58,264,304	56,378,545	37	493	20,728
Nov-16	3,695,890	3,341,094	354,796	10.62%	0.94	58,361,322	56,367,624	237	494	20,759
Dec-16	6,975,769	6,860,622	115,147	1.68%	0.30	58,045,326	56,749,014	524	495	20,789
Jan-17	10,656,811	10,455,735	201,075	1.92%	0.53	59,320,200	58,157,090	859	496	20,820
Feb-17	11,019,762	10,511,691	508,071	4.83%	1.35	59,832,554	59,074,041	1,057	497	20,851
Mar-17	9,179,129	8,922,495	256,634	2.88%	0.68	58,998,467	58,348,577	957	498	20,879
Apr-17	7,888,958	7,722,705	166,252	2.15%	0.44	60,010,430	59,140,106	958	498	20,910
May-17		5,226,219					59,972,652	733	499	20,940
Jun-17		1,794,771					58,867,076	211	500	20,971
Jul-17		2,187,876					59,606,378	141	500	21,001

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month				Independent Variable			
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual	R12	Projected	R12	BDD_1	EE	DT
Aug-17		1,254,601						60,195,966		29		501
Sep-17		1,027,914						60,381,635		8		502
Oct-17		1,409,755						60,715,478		62		502
Nov-17		3,587,798						60,962,182		265		503
Dec-17		7,023,604						61,125,164		561		503
Jan-18		10,553,439						61,222,868		879		504
Feb-18		11,006,614						61,717,792		1,138		504
Mar-18		9,927,269						62,722,565		1,137		505
Apr-18		7,352,384						62,352,244		972		505
May-18		4,611,849						61,737,874		705		505
Jun-18		2,796,023						62,739,126		374		506
Jul-18		2,025,558						62,576,808		141		506
Aug-18		1,162,191						62,484,398		29		507
Sep-18		979,717						62,436,201		8		507
Oct-18		1,392,723						62,419,169		62		508
Nov-18		3,590,505						62,421,876		265		508
Dec-18		7,101,782						62,500,054		561		509
Jan-19		10,697,760						62,644,374		879		509
Feb-19		11,169,156						62,806,916		1,138		510
Mar-19		10,074,360						62,954,007		1,137		510
Apr-19		7,485,397						63,087,020		972		511
May-19		4,717,566						63,192,736		705		511
Jun-19		2,840,275						63,236,988		374		512
Jul-19		2,052,859						63,264,289		141		512
Aug-19		1,178,489						63,280,587		29		512
Sep-19		998,174						63,299,045		8		513
Oct-19		1,416,724						63,323,046		62		513
Nov-19		3,638,952						63,371,494		265		514
Dec-19		7,219,618						63,489,329		561		514
Jan-20		10,876,984						63,668,554		879		514
Feb-20		11,334,089						63,833,488		1,138		515
Mar-20		10,179,222						63,938,350		1,137		515
Apr-20		7,581,806						64,034,759		972		515
May-20		4,793,978						64,111,171		705		515
Jun-20		2,879,530						64,150,427		374		515
Jul-20		2,077,378						64,174,946		141		515
Aug-20		1,192,941						64,189,398		29		515
Sep-20		1,013,331						64,204,554		8		515
Oct-20		1,433,312						64,221,142		62		515
Nov-20		3,669,530						64,251,720		265		515
Dec-20		7,290,630						64,322,731		561		515
Jan-21		11,004,950						64,450,697		879		515
Feb-21		11,454,578						64,571,185		1,138		515
Mar-21		10,251,729						64,643,692		1,137		516
Apr-21		7,647,036						64,708,922		972		516
May-21		4,844,059						64,759,003		705		516
Jun-21		2,905,889						64,785,362		374		516
Jul-21		2,092,494						64,800,478		141		516
Aug-21		1,203,568						64,811,105		29		516
Sep-21		1,026,007						64,823,781		8		517
Oct-21		1,449,405						64,839,874		62		517
Nov-21		3,703,680						64,874,025		265		517
Dec-21		7,366,449						64,949,843		561		518
Jan-22		11,149,022						65,093,916		879		518
Feb-22		11,603,350						65,242,688		1,138		519
Mar-22		10,369,118						65,360,078		1,137		519
Apr-22		7,748,564						65,461,607		972		520
May-22		4,920,322						65,537,870		705		520
Jun-22		2,951,410						65,583,391		374		521
Jul-22		2,122,311						65,613,207		141		522
Aug-22		1,222,270						65,631,910		29		522
Sep-22		1,044,862						65,650,764		8		523
Oct-22		1,475,076						65,676,436		62		523
Nov-22		3,761,930						65,734,685		265		524
Dec-22		7,482,737						65,850,973		561		524

Modeling Results
Liberty Utilities
Commercial and Industrial Heating Sales and Transportation Volumes

Actual, Projected, Residual (Therms)						Rolling 12-Month			Independent Variable				
Plan Year	Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual	R12	Projected	R12	BDD_1	EE	DT
											BDD_1	EE	DT
PY2011		51,920,241		53,647,040							6,527	5,472	224,804
PY2012		51,922,730		50,660,411							5,362	5,519	229,192
PY2013		53,782,724		54,248,808							6,060	5,577	233,576
PY2014		57,869,776		59,139,539							6,772	5,646	237,956
PY2015		58,058,619		59,340,742							6,720	5,756	242,336
PY2016		58,264,304		56,378,545							5,447	5,868	246,724
PY2017				60,715,478							5,776	5,982	251,108
PY2018				62,419,169							6,272	6,063	255,488
PY2019				63,323,046							6,272	6,130	259,868
PY2020				64,221,142							6,272	6,179	264,256
PY2021				64,839,874							6,272	6,190	268,640
PY2022				65,676,436							6,272	6,243	273,020
Growth													
PY2012		2,489		(2,986,629)							(1,165)	47	4,388
PY2013		1,859,994		3,588,398							698	59	4,384
PY2014		4,087,051		4,890,731							712	69	4,380
PY2015		188,844		201,204							(52)	110	4,380
PY2016		205,684		(2,962,197)							(1,273)	113	4,388
PY2017				4,336,932							329	114	4,384
PY2018				1,703,692							497	81	4,380
PY2019				903,877							-	67	4,380
PY2020				898,097							-	48	4,388
PY2021				618,732							-	12	4,384
PY2022				836,561							-	52	4,380
Growth Rate (%)													
PY2012		0.0%		-5.6%							-17.8%	0.9%	2.0%
PY2013		3.6%		7.1%							13.0%	1.1%	1.9%
PY2014		7.6%		9.0%							11.7%	1.2%	1.9%
PY2015		0.3%		0.3%							-0.8%	1.9%	1.8%
PY2016		0.4%		-5.0%							-18.9%	2.0%	1.8%
PY2017				7.7%							6.0%	1.9%	1.8%
PY2018				2.8%							8.6%	1.4%	1.7%
PY2019				1.4%							0.0%	1.1%	1.7%
PY2020				1.4%							0.0%	0.8%	1.7%
PY2021				1.0%							0.0%	0.2%	1.7%
PY2022				1.3%							0.0%	0.8%	1.6%

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Customers

Dependent Variable: CNF_CUS
Method AutoReg
Observations 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
Intercept	1	1,226.28	143.22	8.56	0.00
RSL	1	0.01	0.01	2.00	0.05
OILPRCCI_2	1	6.18	1.30	4.76	0.00
dm1	1	48.88	8.69	5.62	0.00
dm11	1	21.26	8.75	2.43	0.02
dm12	1	61.94	9.80	6.32	0.00
AR1	1	(0.84)	0.07	(11.47)	0.00
AR3	1	0.38	0.08	4.89	0.00
AR15	1	(0.17)	0.10	(1.63)	0.11
AR16	1	0.23	0.10	2.28	0.03

<u>Model Fitness:</u>	
Regress R-Square	0.5132
Total R-Square	0.7552
SSE	40,153.73
MSE	565.55
SBC	779.24
MAE	16.52
MAPE	1.02
Durbin-Watson	2.20
Root MSE	23.78
AIC	755.29
AICC	758.43
HQC	764.90

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Customers

Actual, Projected, Residual					Rolling 12-Month			Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	RSL	OILPRCCI_2
Aug-10	1,603	1,565	38	2.45%	1.61			19,567	19
Sep-10	1,556	1,592	(36)	-2.26%	(1.52)			19,679	19
Oct-10	1,539	1,545	(6)	-0.37%	(0.24)			19,785	19
Nov-10	1,561	1,553	8	0.53%	0.35			19,885	20
Dec-10	1,614	1,616	(2)	-0.12%	(0.08)			19,979	21
Jan-11	1,627	1,620	8	0.47%	0.32			20,070	21
Feb-11	1,602	1,599	3	0.19%	0.13			20,153	22
Mar-11	1,591	1,617	(26)	-1.62%	(1.10)			20,232	23
Apr-11	1,603	1,601	2	0.12%	0.08			20,311	25
May-11	1,600	1,601	(1)	-0.07%	(0.05)			20,387	25
Jun-11	1,597	1,609	(12)	-0.71%	(0.49)			20,461	25
Jul-11	1,596	1,606	(10)	-0.61%	(0.41)	1,591	1,594	20,533	25
Aug-11	1,601	1,607	(6)	-0.37%	(0.25)	1,591	1,597	20,605	25
Sep-11	1,592	1,612	(21)	-1.29%	(0.88)	1,594	1,599	20,674	25
Oct-11	1,591	1,601	(10)	-0.63%	(0.42)	1,598	1,604	20,742	25
Nov-11	1,617	1,618	(2)	-0.10%	(0.07)	1,603	1,609	20,809	25
Dec-11	1,640	1,660	(20)	-1.20%	(0.84)	1,605	1,613	20,874	26
Jan-12	1,632	1,641	(9)	-0.54%	(0.38)	1,605	1,614	20,939	26
Feb-12	1,632	1,599	33	2.05%	1.38	1,608	1,614	21,000	25
Mar-12	1,620	1,646	(26)	-1.56%	(1.08)	1,610	1,617	21,060	25
Apr-12	1,646	1,639	7	0.43%	0.30	1,614	1,620	21,119	25
May-12	1,651	1,640	10	0.63%	0.44	1,618	1,623	21,177	25
Jun-12	1,636	1,642	(6)	-0.39%	(0.27)	1,621	1,626	21,234	25
Jul-12	1,649	1,625	24	1.48%	1.02	1,625	1,628	21,289	25
Aug-12	1,629	1,633	(4)	-0.24%	(0.16)	1,628	1,630	21,343	25
Sep-12	1,617	1,623	(5)	-0.34%	(0.23)	1,630	1,631	21,395	25
Oct-12	1,566	1,609	(43)	-2.67%	(1.81)	1,628	1,631	21,446	25
Nov-12	1,599	1,597	2	0.13%	0.08	1,626	1,630	21,495	25
Dec-12	1,661	1,650	11	0.65%	0.45	1,628	1,629	21,543	26
Jan-13	1,695	1,676	19	1.14%	0.81	1,633	1,631	21,591	26
Feb-13	1,661	1,663	(1)	-0.08%	(0.06)	1,636	1,637	21,635	26
Mar-13	1,627	1,662	(35)	-2.11%	(1.48)	1,636	1,638	21,678	25
Apr-13	1,644	1,622	22	1.36%	0.93	1,636	1,637	21,721	25
May-13	1,665	1,639	25	1.54%	1.06	1,637	1,637	21,764	25
Jun-13	1,662	1,656	6	0.37%	0.26	1,640	1,638	21,805	25
Jul-13	1,665	1,654	11	0.64%	0.45	1,641	1,640	21,845	25
Aug-13	1,667	1,643	24	1.47%	1.02	1,644	1,641	21,885	25
Sep-13	1,624	1,643	(19)	-1.19%	(0.82)	1,645	1,643	21,923	25
Oct-13	1,583	1,612	(29)	-1.83%	(1.24)	1,646	1,643	21,960	25
Nov-13	1,592	1,593	(1)	-0.04%	(0.03)	1,645	1,643	21,997	25
Dec-13	1,645	1,642	3	0.18%	0.12	1,644	1,642	22,033	26
Jan-14	1,653	1,650	4	0.23%	0.16	1,641	1,640	22,068	26
Feb-14	1,581	1,637	(56)	-3.43%	(2.37)	1,634	1,638	22,102	25
Mar-14	1,628	1,605	23	1.44%	0.97	1,634	1,633	22,135	24
Apr-14	1,665	1,647	19	1.12%	0.78	1,636	1,635	22,168	24
May-14	1,731	1,680	52	3.07%	2.17	1,641	1,638	22,202	24
Jun-14	1,668	1,706	(38)	-2.21%	(1.59)	1,642	1,643	22,235	24
Jul-14	1,649	1,649	0	0.00%	0.00	1,641	1,642	22,267	24
Aug-14	1,569	1,608	(38)	-2.39%	(1.62)	1,632	1,639	22,300	24
Sep-14	1,516	1,560	(43)	-2.78%	(1.83)	1,624	1,632	22,332	24
Oct-14	1,534	1,524	10	0.64%	0.41	1,619	1,625	22,363	24
Nov-14	1,582	1,591	(8)	-0.52%	(0.35)	1,619	1,625	22,394	24
Dec-14	1,717	1,666	50	3.02%	2.12	1,625	1,627	22,423	25
Jan-15	1,696	1,729	(33)	-1.92%	(1.40)	1,628	1,633	22,452	25
Feb-15	1,734	1,670	64	3.83%	2.70	1,641	1,636	22,478	24
Mar-15	1,661	1,662	(1)	-0.04%	(0.03)	1,644	1,641	22,502	16
Apr-15	1,657	1,648	8	0.51%	0.35	1,643	1,641	22,526	16
May-15	1,628	1,603	25	1.55%	1.05	1,634	1,635	22,548	16
Jun-15	1,616	1,603	14	0.85%	0.57	1,630	1,626	22,568	16
Jul-15	1,611	1,587	23	1.47%	0.98	1,627	1,621	22,586	16
Aug-15	1,604	1,596	8	0.48%	0.32	1,630	1,620	22,603	16
Sep-15	1,571	1,569	2	0.15%	0.10	1,634	1,621	22,619	16
Oct-15	1,550	1,555	(5)	-0.34%	(0.23)	1,636	1,623	22,638	16
Nov-15	1,567	1,553	14	0.88%	0.58	1,634	1,620	22,660	16
Dec-15	1,633	1,612	21	1.28%	0.87	1,627	1,616	22,688	16
Jan-16	1,644	1,644	0	0.02%	0.01	1,623	1,609	22,723	16
Feb-16	1,611	1,618	(6)	-0.40%	(0.27)	1,613	1,604	22,766	16
Mar-16	1,586	1,608	(23)	-1.41%	(0.96)	1,606	1,600	22,819	13
Apr-16	1,632	1,574	57	3.65%	2.42	1,604	1,594	22,884	13
May-16	1,604	1,584	20	1.23%	0.83	1,602	1,592	22,964	13
Jun-16	1,599	1,579	20	1.29%	0.86	1,601	1,590	23,059	13
Jul-16	1,585	1,580	5	0.31%	0.21	1,599	1,589	23,171	13
Aug-16	1,556	1,558	(2)	-0.14%	(0.09)	1,595	1,586	23,303	13
Sep-16	1,538	1,541	(2)	-0.16%	(0.10)	1,592	1,584	23,446	13
Oct-16	1,526	1,534	(8)	-0.52%	(0.34)	1,590	1,582	23,602	13
Nov-16	1,569	1,557	12	0.77%	0.50	1,590	1,583	23,768	13
Dec-16	1,570	1,620	(50)	-3.10%	(2.12)	1,585	1,583	23,941	13
Jan-17	1,590	1,584	6	0.38%	0.26	1,581	1,578	24,122	13
Feb-17	1,567	1,559	9	0.56%	0.37	1,577	1,573	24,296	13
Mar-17	1,575	1,617	(42)	-2.59%	(1.77)	1,576	1,574	24,471	15
Apr-17	1,591	1,598	(7)	-0.46%	(0.31)	1,572	1,576	24,649	15
May-17		1,600					1,577	24,822	15
Jun-17		1,607					1,580	24,989	15
Jul-17		1,608					1,582	25,146	15

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Customers

Actual, Projected, Residual					Rolling 12-Month			Independent Variable			
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual	R12	Projected	R12	RSL	OILPRCCI_2
Aug-17		1,611							1,586	25,295	15
Sep-17		1,605							1,592	25,433	15
Oct-17		1,600							1,597	25,562	15
Nov-17		1,616							1,602	25,685	15
Dec-17		1,659							1,605	25,802	15
Jan-18		1,652							1,611	25,917	15
Feb-18		1,617							1,616	26,023	15
Mar-18		1,625							1,617	26,126	17
Apr-18		1,639							1,620	26,232	16
May-18		1,643							1,624	26,338	16
Jun-18		1,640							1,626	26,445	17
Jul-18		1,637							1,629	26,554	17
Aug-18		1,632							1,630	26,668	17
Sep-18		1,629							1,632	26,781	17
Oct-18		1,627							1,635	26,896	17
Nov-18		1,649							1,637	27,011	17
Dec-18		1,692							1,640	27,126	17
Jan-19		1,683							1,643	27,242	17
Feb-19		1,637							1,644	27,351	17
Mar-19		1,644							1,646	27,458	17
Apr-19		1,648							1,647	27,566	17
May-19		1,652							1,647	27,670	17
Jun-19		1,651							1,648	27,770	17
Jul-19		1,652							1,650	27,865	17
Aug-19		1,649							1,651	27,957	18
Sep-19		1,647							1,653	28,043	18
Oct-19		1,645							1,654	28,125	18
Nov-19		1,667							1,656	28,203	18
Dec-19		1,710							1,657	28,279	18
Jan-20		1,701							1,659	28,355	18
Feb-20		1,656							1,660	28,426	18
Mar-20		1,659							1,662	28,497	18
Apr-20		1,661							1,663	28,569	18
May-20		1,661							1,663	28,641	18
Jun-20		1,662							1,664	28,714	18
Jul-20		1,661							1,665	28,788	18
Aug-20		1,661							1,666	28,866	18
Sep-20		1,660							1,667	28,944	18
Oct-20		1,661							1,668	29,024	18
Nov-20		1,683							1,670	29,106	18
Dec-20		1,726							1,671	29,190	18
Jan-21		1,715							1,672	29,277	18
Feb-21		1,668							1,673	29,361	18
Mar-21		1,670							1,674	29,447	18
Apr-21		1,671							1,675	29,537	18
May-21		1,672							1,676	29,629	18
Jun-21		1,673							1,677	29,723	18
Jul-21		1,673							1,678	29,818	18
Aug-21		1,673							1,679	29,916	18
Sep-21		1,673							1,680	30,014	18
Oct-21		1,674							1,681	30,113	18
Nov-21		1,697							1,682	30,214	18
Dec-21		1,740							1,683	30,315	18
Jan-22		1,730							1,685	30,420	18
Feb-22		1,683							1,686	30,520	18
Mar-22		1,684							1,687	30,621	18
Apr-22		1,684							1,688	30,726	18
May-22		1,685							1,689	30,831	18
Jun-22		1,687							1,690	30,937	18
Jul-22		1,688							1,692	31,044	18
Aug-22		1,688							1,693	31,152	18
Sep-22		1,689							1,694	31,258	18
Oct-22		1,691							1,696	31,364	18
Nov-22		1,714							1,697	31,469	18
Dec-22		1,756							1,698	31,572	18

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Use per Customer

Dependent Variable: CNF_UPC
Method AutoReg
Observations 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
BDD_1	1	0.66	0.15	4.54	0.00
AR1	1	(0.54)	0.09	(5.85)	0.00
AR12	1	(0.44)	0.10	(4.49)	0.00

Model Fitness:

Regress R-Square	0.4739
Total R-Square	0.9636
SSE	2,510,312.84
MSE	32,183.50
SBC	1,087.20
MAE	143.60
MAPE	19.18
Durbin-Watson	2.30
Root MSE	179.40
AIC	1,080.02
AICC	1,080.33
HQC	1,082.90

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Use per Customer

Actual, Projected, Residual (Therms/ Customer)					Rolling 12-Month			Independent Variable
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD_1
Aug-10	344	13	332	2632.40%	1.83			19
Sep-10	544	300	244	81.52%	1.35			2
Oct-10	371	507	(135)	-26.72%	(0.75)			39
Nov-10	577	487	90	18.41%	0.50			261
Dec-10	868	753	115	15.26%	0.64			584
Jan-11	974	1,044	(70)	-6.73%	(0.39)			924
Feb-11	991	1,152	(161)	-13.98%	(0.89)			1,234
Mar-11	847	989	(142)	-14.33%	(0.78)			1,220
Apr-11	1,064	745	319	42.76%	1.76			1,006
May-11	540	839	(299)	-35.64%	(1.65)			710
Jun-11	611	366	245	66.85%	1.35			364
Jul-11	574	449	125	27.83%	0.69	8,305	7,643	150
Aug-11	627	431	196	45.60%	1.09	8,588	8,062	39
Sep-11	539	569	(30)	-5.26%	(0.17)	8,583	8,331	1
Oct-11	395	470	(75)	-15.87%	(0.41)	8,607	8,294	37
Nov-11	623	543	80	14.71%	0.44	8,653	8,350	245
Dec-11	682	795	(113)	-14.18%	(0.62)	8,468	8,392	500
Jan-12	867	849	17	2.04%	0.10	8,361	8,197	752
Feb-12	957	950	7	0.75%	0.04	8,327	7,996	1,016
Mar-12	1,091	843	248	29.41%	1.37	8,571	7,850	1,013
Apr-12	760	924	(164)	-17.77%	(0.91)	8,267	8,028	784
May-12	604	521	83	15.91%	0.46	8,331	7,710	543
Jun-12	601	492	110	22.29%	0.61	8,320	7,835	294
Jul-12	515	509	6	1.26%	0.04	8,261	7,895	116
Aug-12	456	531	(75)	-14.15%	(0.42)	8,089	7,995	39
Sep-12	540	472	68	14.38%	0.38	8,091	7,898	-
Oct-12	636	500	137	27.38%	0.76	8,332	7,928	63
Nov-12	453	679	(226)	-33.33%	(1.25)	8,162	8,064	229
Dec-12	847	693	154	22.19%	0.85	8,326	7,962	564
Jan-13	913	1,006	(93)	-9.25%	(0.51)	8,372	8,119	884
Feb-13	1,236	1,014	223	21.99%	1.23	8,652	8,182	1,071
Mar-13	895	1,198	(303)	-25.26%	(1.67)	8,456	8,537	1,095
Apr-13	993	832	161	19.35%	0.89	8,689	8,445	955
May-13	794	765	29	3.82%	0.16	8,879	8,689	695
Jun-13	669	596	72	12.13%	0.40	8,946	8,794	355
Jul-13	595	512	82	16.03%	0.45	9,026	8,797	125
Aug-13	290	482	(193)	-39.97%	(1.07)	8,860	8,749	20
Sep-13	477	390	87	22.18%	0.48	8,796	8,667	1
Oct-13	393	569	(175)	-30.81%	(0.97)	8,553	8,736	70
Nov-13	712	495	217	43.92%	1.20	8,813	8,551	260
Dec-13	974	896	79	8.80%	0.44	8,941	8,754	592
Jan-14	1,122	1,110	12	1.05%	0.06	9,149	8,858	979
Feb-14	1,290	1,303	(13)	-1.03%	(0.07)	9,203	9,148	1,226
Mar-14	909	1,141	(232)	-20.36%	(1.28)	9,216	9,091	1,217
Apr-14	1,312	950	362	38.15%	2.00	9,535	9,209	1,108
May-14	723	998	(275)	-27.57%	(1.52)	9,465	9,442	809
Jun-14	434	543	(110)	-20.16%	(0.61)	9,230	9,390	377
Jul-14	532	406	126	31.07%	0.70	9,168	9,283	120
Aug-14	393	377	16	4.27%	0.09	9,271	9,178	13
Sep-14	560	423	137	32.42%	0.76	9,354	9,211	4
Oct-14	814	503	310	61.58%	1.71	9,774	9,146	70
Nov-14	857	815	43	5.27%	0.24	9,920	9,465	239
Dec-14	1,369	1,009	360	35.63%	1.99	10,314	9,579	560
Jan-15	1,532	1,331	201	15.11%	1.11	10,725	9,800	873
Feb-15	1,448	1,498	(50)	-3.34%	(0.28)	10,883	9,994	1,158
Mar-15	1,381	1,321	60	4.56%	0.33	11,355	10,174	1,366
Apr-15	1,346	1,331	16	1.19%	0.09	11,389	10,555	1,231
May-15	881	901	(19)	-2.13%	(0.11)	11,548	10,458	799
Jun-15	1,001	490	511	104.15%	2.82	12,114	10,404	328
Jul-15	766	695	71	10.15%	0.39	12,348	10,693	103
Aug-15	716	575	141	24.54%	0.78	12,671	10,891	37
Sep-15	844	623	220	35.38%	1.22	12,955	11,092	1
Oct-15	580	818	(238)	-29.05%	(1.31)	12,721	11,406	29
Nov-15	1,146	778	369	47.40%	2.04	13,010	11,369	246
Dec-15	1,363	1,314	49	3.74%	0.27	13,005	11,674	509
Jan-16	1,483	1,426	58	4.05%	0.32	12,956	11,768	671
Feb-16	1,617	1,484	132	8.93%	0.73	13,125	11,755	932
Mar-16	1,444	1,443	1	0.08%	0.01	13,188	11,877	1,039
Apr-16	1,050	1,208	(158)	-13.08%	(0.87)	12,891	11,754	848
May-16	916	843	73	8.60%	0.40	12,926	11,697	637
Jun-16	596	869	(274)	-31.49%	(1.51)	12,521	12,076	383
Jul-16	846	577	269	46.58%	1.49	12,601	11,958	124
Aug-16	502	735	(233)	-31.74%	(1.29)	12,387	12,119	20

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Use per Customer

Actual, Projected, Residual (Therms/ Customer)					Rolling 12-Month		Independent Variable	
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	BDD 1
Sep-16	805	642	163	25.47%	0.90	12,349	12,137	4
Oct-16	810	710	101	14.22%	0.56	12,579	12,029	37
Nov-16	922	1,021	(98)	-9.61%	(0.54)	12,355	12,272	237
Dec-16	1,172	1,218	(46)	-3.77%	(0.25)	12,164	12,176	524
Jan-17	1,236	1,478	(241)	-16.34%	(1.34)	11,917	12,228	859
Feb-17	1,755	1,506	249	16.54%	1.38	12,055	12,250	1,057
Mar-17	1,265	1,543	(278)	-18.02%	(1.54)	11,876	12,350	957
Apr-17	1,294	1,194	100	8.36%	0.55	12,120	12,336	958
May-17		1,063					12,556	733
Jun-17		606					12,292	211
Jul-17		685					12,400	141
Aug-17		558					12,222	29
Sep-17		654					12,234	8
Oct-17		742					12,267	62
Nov-17		896					12,143	265
Dec-17		1,129					12,053	561
Jan-18		1,291					11,866	879
Feb-18		1,606					11,966	1,138
Mar-18		1,497					11,920	1,137
Apr-18		1,341					12,067	972
May-18		1,102					12,105	705
Jun-18		799					12,299	374
Jul-18		656					12,270	141
Aug-18		564					12,276	29
Sep-18		589					12,210	8
Oct-18		669					12,137	62
Nov-18		836					12,078	265
Dec-18		1,067					12,015	561
Jan-19		1,274					11,999	879
Feb-19		1,508					11,900	1,138
Mar-19		1,493					11,897	1,137
Apr-19		1,355					11,911	972
May-19		1,135					11,944	705
Jun-19		855					12,000	374
Jul-19		673					12,017	141
Aug-19		576					12,029	29
Sep-19		567					12,007	8
Oct-19		624					11,963	62
Nov-19		786					11,912	265
Dec-19		1,011					11,857	561
Jan-20		1,237					11,820	879
Feb-20		1,444					11,756	1,138
Mar-20		1,456					11,719	1,137
Apr-20		1,341					11,706	972
May-20		1,142					11,713	705
Jun-20		884					11,742	374
Jul-20		697					11,765	141
Aug-20		594					11,783	29
Sep-20		567					11,783	8
Oct-20		605					11,764	62
Nov-20		753					11,730	265
Dec-20		969					11,688	561
Jan-21		1,198					11,648	879
Feb-21		1,394					11,598	1,138
Mar-21		1,413					11,555	1,137
Apr-21		1,312					11,526	972
May-21		1,129					11,513	705
Jun-21		890					11,519	374
Jul-21		710					11,532	141
Aug-21		609					11,547	29
Sep-21		575					11,556	8
Oct-21		601					11,552	62
Nov-21		736					11,535	265
Dec-21		941					11,507	561
Jan-22		1,165					11,474	879
Feb-22		1,354					11,434	1,138
Mar-22		1,372					11,393	1,137
Apr-22		1,277					11,358	972
May-22		1,104					11,333	705
Jun-22		879					11,322	374
Jul-22		710					11,322	141
Aug-22		616					11,328	29
Sep-22		582					11,336	8
Oct-22		603					11,338	62
Nov-22		729					11,332	265
Dec-22		925					11,316	561

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Volumes

Actual, Projected, Residual (Therms)					Rolling 12-Month			Independent Variable		
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD_1	RSL	OILPRCCI_2
Aug-10	551,611	19,706	531,905	2699.21%	1.81			19	19,567	19
Sep-10	846,260	476,990	369,269	77.42%	1.26			2	19,679	19
Oct-10	571,241	782,478	(211,237)	-27.00%	(0.72)			39	19,785	19
Nov-10	899,981	756,012	143,969	19.04%	0.49			261	19,885	20
Dec-10	1,400,523	1,216,474	184,049	15.13%	0.63			584	19,979	21
Jan-11	1,585,102	1,691,595	(106,493)	-6.30%	(0.36)			924	20,070	21
Feb-11	1,587,323	1,841,866	(254,543)	-13.82%	(0.87)			1,234	20,153	22
Mar-11	1,348,113	1,599,430	(251,317)	-15.71%	(0.86)			1,220	20,232	23
Apr-11	1,705,400	1,193,146	512,254	42.93%	1.75			1,006	20,311	25
May-11	863,990	1,343,348	(479,359)	-35.68%	(1.63)			710	20,387	25
Jun-11	976,474	589,462	387,012	65.66%	1.32			364	20,461	25
Jul-11	916,768	721,550	195,218	27.06%	0.67	13,252,785	12,232,058	150	20,533	25
Aug-11	1,004,571	692,501	312,069	45.06%	1.06	13,705,745	12,904,854	39	20,605	25
Sep-11	857,322	916,729	(59,407)	-6.48%	(0.20)	13,716,808	13,344,592	1	20,674	25
Oct-11	628,999	752,354	(123,355)	-16.40%	(0.42)	13,774,565	13,314,468	37	20,742	25
Nov-11	1,006,852	878,579	128,273	14.60%	0.44	13,881,435	13,437,035	245	20,809	25
Dec-11	1,118,994	1,319,855	(200,861)	-15.22%	(0.68)	13,599,907	13,540,416	500	20,874	26
Jan-12	1,414,741	1,394,078	20,662	1.48%	0.07	13,429,545	13,242,900	752	20,939	26
Feb-12	1,561,842	1,519,138	42,703	2.81%	0.15	13,404,064	12,920,172	1,016	21,000	25
Mar-12	1,767,637	1,387,528	380,109	27.39%	1.29	13,823,588	12,708,270	1,013	21,060	25
Apr-12	1,250,341	1,513,882	(263,541)	-17.41%	(0.90)	13,368,529	13,029,006	784	21,119	25
May-12	996,635	854,484	142,151	16.64%	0.48	13,501,175	12,540,142	543	21,177	25
Jun-12	983,084	807,034	176,051	21.81%	0.60	13,507,785	12,757,714	294	21,234	25
Jul-12	849,006	826,187	22,819	2.76%	0.08	13,440,022	12,862,350	116	21,289	25
Aug-12	742,181	866,527	(124,346)	-14.35%	(0.42)	13,177,632	13,036,376	39	21,343	25
Sep-12	873,364	766,163	107,201	13.99%	0.37	13,193,674	12,885,810	-	21,395	25
Oct-12	997,028	804,211	192,817	23.98%	0.66	13,561,703	12,937,667	63	21,446	25
Nov-12	724,290	1,085,091	(360,801)	-33.25%	(1.23)	13,279,142	13,144,179	229	21,495	25
Dec-12	1,405,715	1,143,017	262,698	22.98%	0.89	13,565,863	12,967,341	564	21,543	26
Jan-13	1,547,173	1,685,747	(138,573)	-8.22%	(0.47)	13,698,296	13,259,010	884	21,591	26
Feb-13	2,053,964	1,685,083	368,882	21.89%	1.26	14,190,419	13,424,954	1,071	21,635	26
Mar-13	1,456,498	1,990,787	(534,289)	-26.84%	(1.82)	13,879,280	14,028,213	1,095	21,678	25
Apr-13	1,632,247	1,349,363	282,884	20.96%	0.96	14,261,185	13,863,694	955	21,721	25
May-13	1,321,187	1,253,329	67,858	5.41%	0.23	14,585,737	14,262,539	695	21,764	25
Jun-13	1,111,371	987,462	123,909	12.55%	0.42	14,714,024	14,442,967	355	21,805	25
Jul-13	989,805	847,602	142,202	16.78%	0.48	14,854,822	14,464,382	125	21,845	25
Aug-13	482,704	792,421	(309,717)	-39.08%	(1.06)	14,595,346	14,390,276	20	21,885	25
Sep-13	774,013	641,125	132,888	20.73%	0.45	14,495,996	14,265,239	1	21,923	25
Oct-13	622,778	916,814	(294,036)	-32.07%	(1.00)	14,121,746	14,377,841	70	21,960	25
Nov-13	1,133,767	788,089	345,678	43.86%	1.18	14,531,223	14,080,839	260	21,997	25
Dec-13	1,603,311	1,471,020	132,291	8.99%	0.45	14,728,818	14,408,842	592	22,033	26
Jan-14	1,855,035	1,831,691	23,344	1.27%	0.08	15,036,680	14,554,786	979	22,068	26
Feb-14	2,038,605	2,132,942	(94,337)	-4.42%	(0.32)	15,021,321	15,002,645	1,226	22,102	25
Mar-14	1,479,713	1,831,599	(351,886)	-19.21%	(1.20)	15,044,536	14,843,457	1,217	22,135	24
Apr-14	2,184,463	1,563,688	620,775	39.70%	2.11	15,596,752	15,057,782	1,108	22,168	24
May-14	1,251,382	1,676,218	(424,836)	-25.34%	(1.45)	15,526,947	15,480,671	809	22,202	24
Jun-14	723,859	927,102	(203,243)	-21.92%	(0.69)	15,139,435	15,420,311	377	22,235	24
Jul-14	877,855	669,772	208,083	31.07%	0.71	15,027,485	15,242,480	120	22,267	24
Aug-14	617,169	606,378	10,790	1.78%	0.04	15,161,949	15,056,438	13	22,300	24
Sep-14	848,656	659,163	189,492	28.75%	0.65	15,236,591	15,074,476	4	22,332	24
Oct-14	1,247,821	767,368	480,453	62.61%	1.64	15,861,634	14,925,030	70	22,363	24
Nov-14	1,356,924	1,295,725	61,199	4.72%	0.21	16,084,792	15,432,666	239	22,394	24
Dec-14	2,349,732	1,681,706	668,026	39.72%	2.28	16,831,213	15,643,352	560	22,423	25
Jan-15	2,598,350	2,301,497	296,852	12.90%	1.01	17,574,528	16,113,158	873	22,452	25
Feb-15	2,510,068	2,501,092	8,975	0.36%	0.03	18,045,990	16,481,308	1,158	22,478	24
Mar-15	2,294,239	2,195,192	99,047	4.51%	0.34	18,860,516	16,844,902	1,366	22,502	16
Apr-15	2,230,489	2,193,112	37,377	1.70%	0.13	18,906,542	17,474,325	1,231	22,526	16
May-15	1,434,928	1,443,769	(8,840)	-0.61%	(0.03)	19,090,089	17,241,876	799	22,548	16
Jun-15	1,617,180	785,520	831,659	105.87%	2.83	19,983,410	17,100,295	328	22,568	16
Jul-15	1,233,687	1,103,775	129,912	11.77%	0.44	20,339,242	17,534,298	103	22,586	16
Aug-15	1,147,675	917,130	230,545	25.14%	0.79	20,869,748	17,845,050	37	22,603	16
Sep-15	1,325,578	977,711	347,867	35.58%	1.19	21,346,670	18,163,598	1	22,619	16
Oct-15	899,071	1,271,613	(372,543)	-29.30%	(1.27)	20,997,920	18,667,843	29	22,638	16
Nov-15	1,796,356	1,208,011	588,345	48.70%	2.00	21,437,352	18,580,129	246	22,660	16
Dec-15	2,226,402	2,118,941	107,461	5.07%	0.37	21,314,022	19,017,364	509	22,688	16
Jan-16	2,439,065	2,343,737	95,328	4.07%	0.32	21,154,738	19,059,604	671	22,723	16
Feb-16	2,604,903	2,401,045	203,858	8.49%	0.69	21,249,573	18,959,557	932	22,766	16
Mar-16	2,289,484	2,320,531	(31,047)	-1.34%	(0.11)	21,244,818	19,084,896	1,039	22,819	13
Apr-16	1,713,437	1,902,043	(188,606)	-9.92%	(0.64)	20,727,766	18,793,827	848	22,884	13
May-16	1,468,655	1,335,876	132,779	9.94%	0.45	20,761,493	18,685,934	637	22,964	13
Jun-16	952,328	1,372,485	(420,157)	-30.61%	(1.43)	20,096,641	19,272,899	383	23,059	13
Jul-16	1,341,366	912,286	429,081	47.03%	1.46	20,204,320	19,081,410	124	23,171	13
Aug-16	780,640	1,145,264	(364,624)	-31.84%	(1.24)	19,837,286	19,309,543	20	23,303	13
Sep-16	1,238,935	989,061	249,874	25.26%	0.85	19,750,643	19,320,894	4	23,446	13
Oct-16	1,236,729	1,088,459	148,270	13.62%	0.51	20,088,301	19,137,739	37	23,602	13
Nov-16	1,447,756	1,589,438	(141,682)	-8.91%	(0.48)	19,739,701	19,519,166	237	23,768	13
Dec-16	1,840,899	1,974,323	(133,424)	-6.76%	(0.45)	19,354,198	19,374,548	524	23,941	13
Jan-17	1,965,644	2,340,563	(374,919)	-16.02%	(1.28)	18,880,777	19,371,374	859	24,122	13
Feb-17	2,750,504	2,347,122	403,382	17.19%	1.37	19,026,378	19,317,451	1,057	24,296	13
Mar-17	1,991,682	2,494,143	(502,461)	-20.15%	(1.71)	18,728,576	19,491,063	957	24,471	15
Apr-17	2,057,571	1,907,502	150,069	7.87%	0.51	19,072,710	19,496,522	958	24,649	15
May-17		1,700,742					19,861,387	733	24,822	15
Jun-17		973,083					19,461,985	211	24,989	15
Jul-17		1,102,253					19,651,952	141	25,146	15
Aug-17		898,085					19,404,773	29	25,295	15
Sep-17		1,049,746					19,465,457	8	25,433	15
Oct-17		1,187,691					19,564,690	62	25,562	15
Nov-17		1,448,030					19,423,282	265	25,685	15
Dec-17		1,872,527					19,321,486	561	25,802	15

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Volumes

<u>Actual, Projected, Residual (Therms)</u>					<u>Rolling 12-Month</u>		<u>Independent Variable</u>			
<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>Project Error %</u>	<u>Standard Residual</u>	<u>Actual_R12</u>	<u>Projected_R12</u>	<u>BDD_1</u>	<u>RSL</u>	<u>OILPRCCI_2</u>
Jan-18		2,131,910					19,112,833	879	25,917	15
Feb-18		2,597,859					19,363,569	1,138	26,023	15
Mar-18		2,432,585					19,302,012	1,137	26,126	17
Apr-18		2,197,029					19,591,539	972	26,232	16
May-18		1,810,037					19,700,834	705	26,338	16
Jun-18		1,310,692					20,038,443	374	26,445	17
Jul-18		1,073,594					20,009,784	141	26,554	17
Aug-18		919,608					20,031,307	29	26,668	17
Sep-18		958,901					19,940,462	8	26,781	17
Oct-18		1,088,104					19,840,875	62	26,896	17
Nov-18		1,379,454					19,772,299	265	27,011	17
Dec-18		1,804,569					19,704,341	561	27,126	17
Jan-19		2,144,319					19,716,749	879	27,242	17
Feb-19		2,467,587					19,586,477	1,138	27,351	17
Mar-19		2,454,628					19,608,520	1,137	27,458	17
Apr-19		2,232,795					19,644,286	972	27,566	17
May-19		1,874,744					19,708,994	705	27,670	17
Jun-19		1,412,490					19,810,792	374	27,770	17
Jul-19		1,112,284					19,849,483	141	27,865	17
Aug-19		949,516					19,879,391	29	27,957	18
Sep-19		932,879					19,853,370	8	28,043	18
Oct-19		1,027,292					19,792,557	62	28,125	18
Nov-19		1,309,575					19,722,678	265	28,203	18
Dec-19		1,729,563					19,647,673	561	28,279	18
Jan-20		2,104,595					19,607,949	879	28,355	18
Feb-20		2,391,155					19,531,518	1,138	28,426	18
Mar-20		2,416,286					19,493,176	1,137	28,497	18
Apr-20		2,227,773					19,488,154	972	28,569	18
May-20		1,897,464					19,510,874	705	28,641	18
Jun-20		1,468,958					19,567,341	374	28,714	18
Jul-20		1,157,004					19,612,061	141	28,788	18
Aug-20		985,985					19,648,530	29	28,866	18
Sep-20		940,402					19,656,053	8	28,944	18
Oct-20		1,004,281					19,633,042	62	29,024	18
Nov-20		1,266,442					19,589,909	265	29,106	18
Dec-20		1,671,711					19,532,056	561	29,190	18
Jan-21		2,053,788					19,481,249	879	29,277	18
Feb-21		2,325,494					19,415,587	1,138	29,361	18
Mar-21		2,359,226					19,358,527	1,137	29,447	18
Apr-21		2,192,328					19,323,082	972	29,537	18
May-21		1,888,704					19,314,322	705	29,629	18
Jun-21		1,488,877					19,334,242	374	29,723	18
Jul-21		1,188,028					19,365,266	141	29,818	18
Aug-21		1,018,933					19,398,213	29	29,916	18
Sep-21		961,847					19,419,658	8	30,014	18
Oct-21		1,005,425					19,420,802	62	30,113	18
Nov-21		1,248,544					19,402,905	265	30,214	18
Dec-21		1,637,255					19,368,450	561	30,315	18
Jan-22		2,015,008					19,329,670	879	30,420	18
Feb-22		2,278,433					19,282,609	1,138	30,520	18
Mar-22		2,310,095					19,233,479	1,137	30,621	18
Apr-22		2,150,216					19,191,367	972	30,726	18
May-22		1,861,448					19,164,110	705	30,831	18
Jun-22		1,482,351					19,157,584	374	30,937	18
Jul-22		1,198,227					19,167,783	141	31,044	18
Aug-22		1,039,795					19,188,645	29	31,152	18
Sep-22		983,590					19,210,388	8	31,258	18
Oct-22		1,018,920					19,223,883	62	31,364	18
Nov-22		1,249,567					19,224,905	265	31,469	18
Dec-22		1,624,306					19,211,956	561	31,572	18

Modeling Results
Liberty Utilities
Commercial and Industrial Non-Heating Sales and Transportation Volumes

Actual, Projected, Residual (Therms)						Rolling 12-Month		Independent Variable			
	Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	BDD_1	RSL	OILPRCCI_2
Plan Year									BDD_1	RSL	
PY2011		13,774,565	13,314,468						6,527	244,033	
PY2012		13,561,703	12,937,667						5,362	253,683	
PY2013		14,121,746	14,377,841						6,060	260,845	
PY2014		15,861,634	14,925,030						6,772	266,201	
PY2015		20,997,920	18,667,843						6,720	270,337	
PY2016		20,088,301	19,137,739						5,447	276,085	
PY2017			19,564,690						5,776	296,492	
PY2018			19,840,875						6,272	315,467	
PY2019			19,792,557						6,272	331,185	
PY2020			19,633,042						6,272	343,306	
PY2021			19,420,802						6,272	355,129	
PY2022			19,223,883						6,272	369,401	
Growth											
PY2012		(212,862)	(376,801)						(1,165)	9,650	
PY2013		560,043	1,440,175						698	7,163	
PY2014		1,739,888	547,188						712	5,356	
PY2015		5,136,286	3,742,814						(52)	4,135	
PY2016		(909,619)	469,896						(1,273)	5,749	
PY2017			426,951						329	20,407	
PY2018			276,185						497	18,975	
PY2019			(48,318)						-	15,718	
PY2020			(159,515)						-	12,121	
PY2021			(212,240)						-	11,823	
PY2022			(196,919)						-	14,272	
Growth Rate (%)											
PY2012		-1.5%	-2.8%						-17.8%	4.0%	
PY2013		4.1%	11.1%						13.0%	2.8%	
PY2014		12.3%	3.8%						11.7%	2.1%	
PY2015		32.4%	25.1%						-0.8%	1.6%	
PY2016		-4.3%	2.5%						-18.9%	2.1%	
PY2017			2.2%						6.0%	7.4%	
PY2018			1.4%						8.6%	6.4%	
PY2019			-0.2%						0.0%	5.0%	
PY2020			-0.8%						0.0%	3.7%	
PY2021			-1.1%						0.0%	3.4%	
PY2022			-1.0%						0.0%	4.0%	

Modeling Results
Liberty Utilities
Commercial & Industrial Heating Capacity Exempt Volume (therm)

Dependent Variable: CHZ_VOL
Method AutoReg
Observations 69

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
EMP	1	423.23	4.79	88.35	0.00
HDD	1	611.87	2.28	268.30	0.00
EARCH0	1	22.86	0.07	340.97	0.00
EARCH5	1	(0.33)	0.08	(4.31)	0.00
THETA	1	(1.14)	0.47	(2.43)	0.02

Model Fitness:

Regress R-Square	0.9762
Total R-Square	0.9762
SSE	71,301,781.49
MSE	8,802,689,072.70
SBC	2,101.00
MAE	72,730.78
MAPE	18.04
Durbin-Watson	
Root MSE	95,000.15
AIC	2,089.03
AICC	2,089.83
HQC	2,093.83

Modeling Results
Liberty Utilities
Commercial & Industrial Heating Capacity Exempt Volume (therm)

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month		Independent Variable
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	EMP
Aug-10	140,978	211,556	(70,579)	-33.36%	(0.75)			497
Sep-10	187,011	256,220	(69,209)	-27.01%	(0.73)			497
Oct-10	400,863	483,217	(82,354)	-17.04%	(0.87)			497
Nov-10	578,578	652,085	(73,507)	-11.27%	(0.78)			497
Dec-10	851,874	899,274	(47,400)	-5.27%	(0.50)			497
Jan-11	905,216	1,031,434	(126,218)	-12.24%	(1.34)			497
Feb-11	775,786	881,528	(105,742)	-12.00%	(1.12)			497
Mar-11	697,865	770,177	(72,312)	-9.39%	(0.77)			497
Apr-11	469,439	519,329	(49,889)	-9.61%	(0.53)			497
May-11	303,741	346,199	(42,458)	-12.26%	(0.45)			497
Jun-11	178,372	257,521	(79,149)	-30.73%	(0.84)			497
Jul-11	129,295	210,466	(81,171)	-38.57%	(0.86)	5,619,018	6,519,006	497
Aug-11	160,021	211,766	(51,745)	-24.44%	(0.55)	5,638,061	6,519,216	497
Sep-11	152,625	254,075	(101,450)	-39.93%	(1.07)	5,603,675	6,517,071	498
Oct-11	423,368	466,496	(43,128)	-9.25%	(0.46)	5,626,180	6,500,351	498
Nov-11	658,379	566,957	91,422	16.12%	0.97	5,705,982	6,415,223	498
Dec-11	848,226	775,118	73,108	9.43%	0.77	5,702,333	6,291,067	498
Jan-12	932,240	889,674	42,566	4.78%	0.45	5,729,356	6,149,306	499
Feb-12	815,067	771,722	43,345	5.62%	0.46	5,768,637	6,039,500	499
Mar-12	731,899	610,333	121,565	19.92%	1.29	5,802,671	5,879,657	499
Apr-12	566,378	476,486	89,892	18.87%	0.95	5,899,610	5,836,814	500
May-12	461,360	305,929	155,430	50.81%	1.65	6,057,228	5,796,544	500
Jun-12	205,922	259,584	(53,662)	-20.67%	(0.57)	6,084,778	5,798,607	501
Jul-12	149,486	212,015	(62,530)	-29.49%	(0.66)	6,104,969	5,800,157	501
Aug-12	159,161	212,175	(53,013)	-24.99%	(0.56)	6,104,109	5,800,565	501
Sep-12	162,308	288,813	(126,506)	-43.80%	(1.34)	6,113,792	5,835,304	502
Oct-12	456,206	415,624	40,581	9.76%	0.43	6,146,630	5,784,432	502
Nov-12	697,251	699,071	(1,821)	-0.26%	(0.02)	6,185,502	5,916,546	502
Dec-12	777,840	807,521	(29,681)	-3.68%	(0.31)	6,115,116	5,948,949	503
Jan-13	1,060,998	928,208	132,790	14.31%	1.41	6,243,874	5,987,483	503
Feb-13	895,237	837,177	58,060	6.94%	0.61	6,324,044	6,052,937	503
Mar-13	769,932	757,768	12,165	1.61%	0.13	6,362,078	6,200,372	504
Apr-13	550,758	519,273	31,485	6.06%	0.33	6,346,457	6,243,159	504
May-13	323,104	341,348	(18,244)	-5.34%	(0.19)	6,208,202	6,278,578	504
Jun-13	203,572	238,066	(34,495)	-14.49%	(0.37)	6,205,851	6,257,060	505
Jul-13	172,566	213,710	(41,144)	-19.25%	(0.44)	6,228,932	6,258,754	505
Aug-13	197,450	215,048	(17,599)	-8.18%	(0.19)	6,267,220	6,261,628	505
Sep-13	341,721	297,761	43,960	14.76%	0.47	6,446,633	6,270,575	505
Oct-13	557,302	448,389	108,913	24.29%	1.15	6,547,729	6,303,340	506
Nov-13	761,731	704,260	57,471	8.16%	0.61	6,612,210	6,308,528	506
Dec-13	908,117	921,585	(13,468)	-1.46%	(0.14)	6,742,487	6,422,593	506
Jan-14	1,023,971	1,006,753	17,218	1.71%	0.18	6,705,461	6,501,138	507
Feb-14	753,950	910,808	(156,858)	-17.22%	(1.66)	6,564,174	6,574,770	507
Mar-14	643,026	874,223	(231,197)	-26.45%	(2.45)	6,437,268	6,691,225	507
Apr-14	450,395	545,178	(94,783)	-17.39%	(1.00)	6,336,905	6,717,130	507
May-14	320,145	345,861	(25,717)	-7.44%	(0.27)	6,333,945	6,721,643	508
Jun-14	179,682	230,385	(50,703)	-22.01%	(0.54)	6,310,055	6,713,961	508
Jul-14	152,146	215,271	(63,125)	-29.32%	(0.67)	6,289,635	6,715,523	509
Aug-14	251,534	219,757	31,777	14.46%	0.34	6,343,720	6,720,232	509
Sep-14	194,892	297,068	(102,176)	-34.39%	(1.08)	6,196,891	6,719,539	510
Oct-14	412,186	426,402	(14,216)	-3.33%	(0.15)	6,051,775	6,697,551	510
Nov-14	615,915	690,360	(74,445)	-10.78%	(0.79)	5,905,959	6,683,652	511
Dec-14	739,085	810,542	(71,456)	-8.82%	(0.76)	5,736,927	6,572,608	511
Jan-15	1,048,853	1,039,040	9,813	0.94%	0.10	5,761,809	6,604,894	512
Feb-15	933,384	1,065,617	(132,233)	-12.41%	(1.40)	5,941,243	6,759,703	513
Mar-15	713,195	874,989	(161,794)	-18.49%	(1.71)	6,011,412	6,760,470	513
Apr-15	494,376	536,918	(42,542)	-7.92%	(0.45)	6,055,394	6,752,210	514
May-15	301,379	299,201	2,178	0.73%	0.02	6,036,628	6,705,550	515
Jun-15	287,333	262,794	24,539	9.34%	0.26	6,144,279	6,737,959	515
Jul-15	271,614	219,050	52,564	24.00%	0.56	6,263,747	6,741,738	516
Aug-15	228,262	218,757	9,505	4.34%	0.10	6,240,474	6,740,738	517
Sep-15	239,547	253,948	(14,401)	-5.67%	(0.15)	6,285,129	6,697,619	518
Oct-15	482,104	484,937	(2,833)	-0.58%	(0.03)	6,355,047	6,756,154	518
Nov-15	551,338	576,416	(25,078)	-4.35%	(0.27)	6,290,470	6,642,209	519
Dec-15	664,121	684,410	(20,289)	-2.96%	(0.21)	6,215,506	6,516,078	520
Jan-16	1,019,756	896,421	123,335	13.76%	1.31	6,186,409	6,373,459	521
Feb-16	956,624	815,326	141,298	17.33%	1.50	6,209,649	6,123,169	521
Mar-16	824,918	663,856	161,062	24.26%	1.71	6,321,372	5,912,035	522
Apr-16	703,702	557,044	146,659	26.33%	1.55	6,530,698	5,932,160	522
May-16	452,978	353,540	99,438	28.13%	1.05	6,682,298	5,986,500	523
Jun-16	325,020	241,188	83,832	34.76%	0.89	6,719,985	5,964,893	524
Jul-16	185,255	226,716	(41,460)	-18.29%	(0.44)	6,633,626	5,972,559	524
Aug-16	168,814	228,807	(59,993)	-26.22%	(0.64)	6,574,178	5,982,609	525
Sep-16	322,661	266,853	55,808	20.91%	0.59	6,657,293	5,995,514	525
Oct-16	695,765	467,697	228,068	48.76%	2.42	6,870,954	5,978,275	525
Nov-16	681,276	618,348	62,928	10.18%	0.67	7,000,892	6,020,207	526
Dec-16	862,102	877,280	(15,178)	-1.73%	(0.16)	7,198,872	6,213,076	526
Jan-17	953,972	860,852	93,120	10.82%	0.99	7,133,088	6,177,507	526

Modeling Results
Liberty Utilities
Commercial & Industrial Heating Capacity Exempt Volume (therm)

Actual, Projected, Residual (Therms/ Customer)						Rolling 12-Month		Independent Variable
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	EMP
Feb-17	846,253	755,680	90,573	11.99%	0.96	7,022,717	6,117,860	526
Mar-17	893,468	861,584	31,884	3.70%	0.34	7,091,266	6,315,588	526
Apr-17	854,928	481,036	373,892	77.73%	3.96	7,242,491	6,239,580	526
May-17		363,531					6,249,571	527
Jun-17		255,186					6,263,568	527
Jul-17		226,202					6,263,054	526
Aug-17		229,567					6,263,815	526
Sep-17		291,924					6,288,886	526
Oct-17		477,867					6,299,055	526
Nov-17		653,318					6,334,025	526
Dec-17		867,780					6,324,525	526
Jan-18		969,878					6,433,551	526
Feb-18		866,310					6,544,181	525
Mar-18		768,149					6,450,746	525
Apr-18		539,031					6,508,742	525
May-18		362,808					6,508,018	525
Jun-18		254,411					6,507,243	525
Jul-18		225,407					6,506,449	525
Aug-18		228,786					6,505,668	525
Sep-18		291,183					6,504,927	524
Oct-18		477,188					6,504,248	524
Nov-18		652,718					6,503,649	524
Dec-18		867,273					6,503,142	525
Jan-19		969,473					6,502,737	525
Feb-19		866,005					6,502,432	525
Mar-19		767,943					6,502,225	525
Apr-19		538,920					6,502,114	525
May-19		362,780					6,502,086	525
Jun-19		254,451					6,502,127	525
Jul-19		225,496					6,502,215	525
Aug-19		228,900					6,502,329	525
Sep-19		291,303					6,502,449	525
Oct-19		477,296					6,502,557	525
Nov-19		652,800					6,502,639	525
Dec-19		867,316					6,502,682	525
Jan-20		969,466					6,502,675	525
Feb-20		865,944					6,502,614	524
Mar-20		767,822					6,502,494	524
Apr-20		538,737					6,502,311	524
May-20		362,534					6,502,065	524
Jun-20		254,145					6,501,759	524
Jul-20		225,134					6,501,397	524
Aug-20		228,489					6,500,986	524
Sep-20		290,851					6,500,534	524
Oct-20		476,811					6,500,050	524
Nov-20		652,292					6,499,542	523
Dec-20		866,795					6,499,021	523
Jan-21		968,943					6,498,497	523
Feb-21		865,430					6,497,983	523
Mar-21		767,330					6,497,490	523
Apr-21		538,279					6,497,032	523
May-21		362,125					6,496,623	523
Jun-21		253,799					6,496,276	523
Jul-21		224,866					6,496,009	523
Aug-21		228,317					6,495,836	523
Sep-21		290,785					6,495,771	524
Oct-21		476,863					6,495,822	524
Nov-21		652,469					6,495,999	524
Dec-21		867,102					6,496,306	524
Jan-22		969,386					6,496,750	524
Feb-22		866,004					6,497,324	525
Mar-22		768,033					6,498,027	525
Apr-22		539,113					6,498,861	525
May-22		363,083					6,499,820	525
Jun-22		254,874					6,500,895	526
Jul-22		226,047					6,502,076	526
Aug-22		229,594					6,503,352	526
Sep-22		292,144					6,504,712	527
Oct-22		478,293					6,506,141	527
Nov-22		653,957					6,507,629	527
Dec-22		868,636					6,509,164	528

Modeling Results
Liberty Utilities
Commercial & Industrial Heating Capacity Exempt Volume (therm)

Actual, Projected, Residual (Therms/ Customer)				Rolling 12-Month		Independent Variable			
Plan Year	Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual_R12	Projected_R12	EMP
PY2011		5,626,180	6,500,351						5,966
PY2012		6,146,630	5,784,432						6,001
PY2013		6,547,729	6,303,340						6,050
PY2014		6,051,775	6,697,551						6,094
PY2015		6,355,047	6,756,154						6,173
PY2016		6,870,954	5,978,275						6,271
PY2017			6,299,055						6,315
PY2018			6,504,248						6,300
PY2019			6,502,557						6,296
PY2020			6,500,050						6,290
PY2021			6,495,822						6,280
PY2022			6,506,141						6,305
Growth									
PY2012		520,450	(715,919)						35
PY2013		401,099	518,908						49
PY2014		(495,955)	394,211						44
PY2015		303,272	58,602						79
PY2016		515,907	(777,879)						98
PY2017			320,781						44
PY2018			205,193						(15)
PY2019			(1,691)						(4)
PY2020			(2,508)						(6)
PY2021			(4,227)						(10)
PY2022			10,319						24
Growth Rate (%)									
PY2012		9.3%	-11.0%						0.6%
PY2013		6.5%	9.0%						0.8%
PY2014		-7.6%	6.3%						0.7%
PY2015		5.0%	0.9%						1.3%
PY2016		8.1%	-11.5%						1.6%
PY2017			5.4%						0.7%
PY2018			3.3%						-0.2%
PY2019			0.0%						-0.1%
PY2020			0.0%						-0.1%
PY2021			-0.1%						-0.2%
PY2022			0.2%						0.4%

Modeling Results
Liberty Utilities
Commercial & Industrial Non-Heating Capacity Exempt Volume (therm)

Dependent Variable: CNZ_VOL
Method: AutoReg
Observations: 81

<u>Variables</u>	<u>DF</u>	<u>Estimate</u>	<u>Standard Error</u>	<u>t Value</u>	<u>Approx Pr > t </u>
NGPRCCI	1	(61,620.02)	26,286.40	(2.34)	0.02
LBF	1	4,675.97	567.19	8.24	0.00
AR1	1	(0.75)	0.08	(9.83)	0.00

Model Fitness:

Regress R-Square	0.8487
Total R-Square	0.9887
SSE	1,686,253,900,000.00
MSE	3,984,057.81
SBC	2,217.90
MAE	152,407.07
MAPE	8.83
Durbin-Watson	2.20
Root MSE	199,601.05
AIC	2,210.71
AICC	2,211.03
HQC	2,213.60

Modeling Results
Liberty Utilities
Commercial & Industrial Non-Heating Capacity Exempt Volume (therm)

Actual, Projected, Residual (Therms/ Customer)				Project Error		Standard		Rolling 12-Month		Independent Variable
Date	Actual	Projected	Residual	%	Residual	Actual	R12	Projected	R12	NGPRCCI
Aug-10	1,950,425	1,752,586	197,840	11.29%	1.00					12
Sep-10	1,826,173	1,864,006	(37,833)	-2.03%	(0.19)					12
Oct-10	2,115,185	1,850,825	264,360	14.28%	1.34					11
Nov-10	2,050,704	2,043,204	7,499	0.37%	0.04					11
Dec-10	1,907,995	1,933,388	(25,393)	-1.31%	(0.13)					12
Jan-11	1,827,172	1,916,189	(89,017)	-4.65%	(0.45)					11
Feb-11	1,907,952	1,800,526	107,426	5.97%	0.54					11
Mar-11	2,110,034	1,870,252	239,783	12.82%	1.21					11
Apr-11	1,850,023	1,988,623	(138,600)	-6.97%	(0.70)					12
May-11	1,995,780	1,826,791	168,990	9.25%	0.85					12
Jun-11	1,782,060	2,001,212	(219,153)	-10.95%	(1.11)					11
Jul-11	1,701,048	1,743,276	(42,229)	-2.42%	(0.21)	23,024,551		22,590,877		11
Aug-11	1,413,618	1,718,512	(304,894)	-17.74%	(1.54)	22,487,744		22,556,804		11
Sep-11	1,767,808	1,488,848	278,960	18.74%	1.41	22,429,380		22,181,646		12
Oct-11	2,004,594	1,813,821	190,773	10.52%	0.96	22,318,789		22,144,642		11
Nov-11	2,033,315	1,929,373	103,942	5.39%	0.53	22,301,400		22,030,811		11
Dec-11	2,241,951	2,001,627	240,324	12.01%	1.22	22,635,356		22,099,050		11
Jan-12	2,299,771	2,109,254	190,517	9.03%	0.96	23,107,955		22,292,114		11
Feb-12	2,112,414	2,172,699	(60,285)	-2.77%	(0.30)	23,312,417		22,664,287		11
Mar-12	2,023,473	2,018,762	4,712	0.23%	0.02	23,225,856		22,812,797		11
Apr-12	2,014,847	1,896,011	118,836	6.27%	0.60	23,390,680		22,720,185		13
May-12	2,039,560	2,057,651	(18,091)	-0.88%	(0.09)	23,434,460		22,951,046		11
Jun-12	1,893,625	2,006,852	(113,226)	-5.64%	(0.57)	23,546,025		22,956,685		10
Jul-12	1,670,038	1,857,060	(187,022)	-10.07%	(0.95)	23,515,015		23,070,469		11
Aug-12	1,752,436	1,667,871	84,565	5.07%	0.43	23,853,833		23,019,828		11
Sep-12	1,674,140	1,798,256	(124,116)	-6.90%	(0.63)	23,760,164		23,329,236		11
Oct-12	2,136,826	1,787,949	348,877	19.51%	1.76	23,892,396		23,303,364		10
Nov-12	1,970,019	2,067,175	(97,156)	-4.70%	(0.49)	23,829,101		23,441,166		10
Dec-12	1,976,534	1,929,474	47,059	2.44%	0.24	23,563,684		23,369,014		10
Jan-13	2,229,562	1,944,839	284,723	14.64%	1.44	23,493,474		23,204,599		10
Feb-13	1,920,009	2,130,286	(210,277)	-9.87%	(1.06)	23,301,070		23,162,187		10
Mar-13	2,110,187	1,845,939	264,248	14.32%	1.34	23,387,784		22,989,364		11
Apr-13	1,871,466	2,036,422	(164,956)	-8.10%	(0.83)	23,244,402		23,129,775		11
May-13	1,856,088	1,886,541	(30,454)	-1.61%	(0.15)	23,060,929		22,958,664		11
Jun-13	1,813,361	1,783,471	29,890	1.68%	0.15	22,980,665		22,735,283		12
Jul-13	1,657,259	1,719,538	(62,280)	-3.62%	(0.31)	22,967,885		22,597,761		13
Aug-13	2,166,005	1,649,582	516,423	31.31%	2.61	23,381,454		22,579,473		13
Sep-13	1,910,572	1,996,879	(86,307)	-4.32%	(0.44)	23,617,886		22,778,095		14
Oct-13	2,170,613	1,942,031	228,582	11.77%	1.16	23,651,673		22,932,177		12
Nov-13	2,066,684	2,151,992	(85,308)	-3.96%	(0.43)	23,748,337		23,016,993		11
Dec-13	1,916,097	1,961,194	(45,097)	-2.30%	(0.23)	23,687,900		23,048,713		12
Jan-14	1,940,652	1,915,030	25,622	1.34%	0.13	23,398,990		23,018,904		11
Feb-14	1,694,606	1,837,573	(142,967)	-7.78%	(0.72)	23,173,588		22,726,190		12
Mar-14	1,703,562	1,676,261	27,302	1.63%	0.14	22,766,963		22,556,512		13
Apr-14	1,588,728	1,622,362	(33,635)	-2.07%	(0.17)	22,484,225		22,142,453		14
May-14	1,913,786	1,660,741	253,045	15.24%	1.28	22,541,923		21,916,652		13
Jun-14	2,299,436	1,919,856	379,580	19.77%	1.92	23,027,998		22,053,037		12
Jul-14	1,989,796	2,161,616	(171,821)	-7.95%	(0.87)	23,360,535		22,495,116		12
Aug-14	2,147,301	1,919,894	227,407	11.84%	1.15	23,341,832		22,765,428		12
Sep-14	2,081,127	2,087,739	(6,613)	-0.32%	(0.03)	23,512,386		22,856,288		12
Oct-14	2,183,201	2,132,247	50,954	2.39%	0.26	23,524,974		23,046,505		10
Nov-14	2,113,837	2,080,504	33,332	1.60%	0.17	23,572,128		22,975,017		10
Dec-14	1,441,442	1,981,143	(539,702)	-27.24%	(2.73)	23,097,473		22,994,967		11
Jan-15	1,295,810	1,337,492	(41,682)	-3.12%	(0.21)	22,452,631		22,417,429		14
Feb-15	1,108,755	1,458,456	(349,701)	-23.98%	(1.77)	21,866,780		22,038,312		13
Mar-15	1,276,226	1,290,318	(14,091)	-1.09%	(0.07)	21,439,444		21,652,369		12
Apr-15	1,190,441	1,443,030	(252,589)	-17.50%	(1.28)	21,041,158		21,473,037		12
May-15	1,641,179	1,432,603	208,576	14.56%	1.05	20,768,551		21,244,900		10
Jun-15	1,893,529	1,727,511	166,018	9.61%	0.84	20,362,644		21,052,555		10
Jul-15	1,833,189	1,894,026	(60,837)	-3.21%	(0.31)	20,206,037		20,784,965		10
Aug-15	1,858,343	1,824,526	33,817	1.85%	0.17	19,917,079		20,689,597		10
Sep-15	1,730,089	1,894,401	(164,313)	-8.67%	(0.83)	19,566,041		20,496,259		10
Oct-15	2,090,840	1,838,404	252,436	13.73%	1.28	19,473,680		20,202,416		9
Nov-15	1,860,913	2,037,481	(176,569)	-8.67%	(0.89)	19,220,756		20,159,393		9
Dec-15	1,652,725	1,777,901	(125,177)	-7.04%	(0.63)	19,432,039		19,956,150		11
Jan-16	1,781,688	1,737,840	43,848	2.52%	0.22	19,917,917		20,356,498		10
Feb-16	1,195,855	1,857,253	(661,398)	-35.61%	(3.34)	20,005,017		20,755,295		9
Mar-16	1,194,944	1,435,614	(240,670)	-16.76%	(1.22)	19,923,734		20,900,592		8
Apr-16	1,542,099	1,382,765	159,333	11.52%	0.81	20,275,391		20,840,326		9
May-16	1,469,636	1,627,561	(157,925)	-9.70%	(0.80)	20,103,849		21,035,285		9
Jun-16	1,704,808	1,540,857	163,951	10.64%	0.83	19,915,128		20,848,631		10
Jul-16	1,653,546	1,629,084	24,462	1.50%	0.12	19,735,486		20,583,689		12
Aug-16	1,872,660	1,690,925	181,736	10.75%	0.92	19,749,803		20,450,087		12

Modeling Results
Liberty Utilities
Commercial & Industrial Non-Heating Capacity Exempt Volume (therm)

Actual, Projected, Residual (Therms/ Customer)					Rolling 12-Month			Independent Variable
Date	Actual	Projected	Residual	Project Error %	Standard Residual	Actual R12	Projected R12	NGPRCCI
Sep-16	1,746,095	1,864,248	(118,152)	-6.34%	(0.60)	19,765,810	20,419,934	12
Oct-16	1,737,462	1,854,201	(116,739)	-6.30%	(0.59)	19,412,431	20,435,730	10
Nov-16	1,734,980	1,781,459	(46,479)	-2.61%	(0.23)	19,286,499	20,179,708	10
Dec-16	1,599,948	1,747,868	(147,921)	-8.46%	(0.75)	19,233,722	20,149,676	11
Jan-17	1,546,398	1,687,092	(140,694)	-8.34%	(0.71)	18,998,432	20,098,928	10
Feb-17	1,510,127	1,615,922	(105,794)	-6.55%	(0.53)	19,312,704	19,857,596	11
Mar-17	1,521,070	1,666,085	(145,016)	-8.70%	(0.73)	19,638,829	20,088,067	10
Apr-17	1,453,959	1,615,051	(161,092)	-9.97%	(0.81)	19,550,690	20,320,353	10
May-17		1,545,960					20,238,751	10
Jun-17		1,580,026					20,277,921	11
Jul-17		1,504,758					20,153,594	13
Aug-17		1,559,736					20,022,405	13
Sep-17		1,610,019					19,768,176	13
Oct-17		1,742,275					19,656,251	11
Nov-17		1,765,453					19,640,244	11
Dec-17		1,748,148					19,640,524	12
Jan-18		1,813,233					19,766,665	11
Feb-18		1,805,130					19,955,874	11
Mar-18		1,882,589					20,172,378	10
Apr-18		1,877,168					20,434,495	11
May-18		1,853,674					20,742,209	11
Jun-18		1,798,193					20,960,376	12
Jul-18		1,647,296					21,102,915	14
Aug-18		1,653,664					21,196,843	14
Sep-18		1,668,050					21,254,874	14
Oct-18		1,780,066					21,292,665	12
Nov-18		1,781,194					21,308,405	12
Dec-18		1,744,999					21,305,256	13
Jan-19		1,800,016					21,292,038	12
Feb-19		1,781,701					21,268,609	12
Mar-19		1,858,380					21,244,399	11
Apr-19		1,847,251					21,214,483	11
May-19		1,818,340					21,179,149	12
Jun-19		1,755,995					21,136,952	13
Jul-19		1,590,689					21,080,344	16
Aug-19		1,595,582					21,022,262	16
Sep-19		1,609,544					20,963,756	15
Oct-19		1,728,795					20,912,486	13
Nov-19		1,727,534					20,858,826	13
Dec-19		1,686,765					20,800,593	14
Jan-20		1,750,655					20,751,232	13
Feb-20		1,730,226					20,699,757	13
Mar-20		1,812,068					20,653,445	12
Apr-20		1,799,592					20,605,786	12
May-20		1,768,456					20,555,902	13
Jun-20		1,701,617					20,501,523	14
Jul-20		1,523,757					20,434,592	17
Aug-20		1,528,626					20,367,635	17
Sep-20		1,543,346					20,301,437	16
Oct-20		1,670,840					20,243,482	14
Nov-20		1,668,150					20,184,098	14
Dec-20		1,623,658					20,120,991	15
Jan-21		1,749,441					20,119,777	13
Feb-21		1,728,832					20,118,383	13
Mar-21		1,811,262					20,117,578	12
Apr-21		1,798,710					20,116,695	12
May-21		1,767,178					20,115,417	13
Jun-21		1,699,623					20,113,423	14
Jul-21		1,520,510					20,110,176	17
Aug-21		1,525,721					20,107,270	17
Sep-21		1,540,871					20,104,795	17
Oct-21		1,669,950					20,103,904	15
Nov-21		1,668,303					20,104,058	15
Dec-21		1,624,194					20,104,594	15
Jan-22		1,758,044					20,113,196	13
Feb-22		1,737,790					20,122,155	13
Mar-22		1,820,470					20,131,363	12
Apr-22		1,808,154					20,140,808	12
May-22		1,776,448					20,150,078	13
Jun-22		1,708,525					20,158,979	14
Jul-22		1,529,435					20,167,905	17
Aug-22		1,534,898					20,177,082	17
Sep-22		1,550,222					20,186,434	17
Oct-22		1,679,891					20,196,375	15
Nov-22		1,679,521					20,207,593	15
Dec-22		1,636,049					20,219,448	15

Modeling Results
Liberty Utilities
Commercial & Industrial Non-Heating Capacity Exempt Volume (therm)

<u>Actual, Projected, Residual (Therms/ Customer)</u>				<u>Project Error</u>		<u>Standard</u>	Rolling 12-Month		<u>Independent Variable</u>
<u>Plan Year</u>	<u>Date</u>	<u>Actual</u>	<u>Projected</u>	<u>Residual</u>	<u>%</u>	<u>Residual</u>	<u>Actual R12</u>	<u>Projected R12</u>	<u>NGPRCCI</u>
	Actual		Projected						NGPRCCI
PY2011		22,318,789	22,144,642						136
PY2012		23,892,396	23,303,364						132
PY2013		23,651,673	22,932,177						139
PY2014		23,524,974	23,046,505						143
PY2015		19,473,680	20,202,416						130
PY2016		19,412,431	20,435,730						121
PY2017			19,656,251						134
PY2018			21,292,665						145
PY2019			20,912,486						157
PY2020			20,243,482						169
PY2021			20,103,904						173
PY2022			20,196,375						173
Growth									
PY2012		1,573,607	1,158,722						(4)
PY2013		(240,723)	(371,187)						6
PY2014		(126,699)	114,328						4
PY2015		(4,051,294)	(2,844,089)						(13)
PY2016		(61,249)	233,315						(9)
PY2017			(779,480)						12
PY2018			1,636,414						12
PY2019			(380,179)						12
PY2020			(669,003)						12
PY2021			(139,578)						3
PY2022			92,471						0
Growth Rate (%)									
PY2012		7.1%	5.2%						-2.7%
PY2013		-1.0%	-1.6%						4.8%
PY2014		-0.5%	0.5%						3.1%
PY2015		-17.2%	-12.3%						-9.0%
PY2016		-0.3%	1.2%						-6.6%
PY2017			-3.8%						10.3%
PY2018			8.3%						8.6%
PY2019			-1.8%						8.2%
PY2020			-3.2%						7.7%
PY2021			-0.7%						1.8%
PY2022			0.5%						0.0%

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APPENDIX 2

Energy Efficiency

Energy efficiency is a priority for the Company and is a key strategy for building a modern and sustainable energy future. Since 2003, EnergyNorth has partnered with the New Hampshire natural gas and electric utilities to manage and administer a statewide portfolio of Energy Efficiency Programs, also known as NHSaves. During this period, customers in New Hampshire have saved over 27.7 million natural gas MMBtus and 13 billion electric kilowatt-hours over the life of the energy efficiency measures installed. These energy savings have resulted in customer cost savings of \$2.2 billion. EnergyNorth's investment during this period has been over \$46 million with lifetime natural gas MMBtu savings of nearly 22 million.

The Company, through NHSaves, offers a suite of efficiency solutions designed to meet the varied needs of our customers, including helping homeowners to retrofit and reinsulate their homes, helping businesses install more efficient boiler, water heating and control systems, and helping municipal and school districts better manage their energy needs. Table 2-1 summarizes the current NHSaves program offerings:

Table 2-1: NHSaves Program Offerings

Program	Measure-Level Examples	Incentives
Residential Sector		
ENERGY STAR Homes	New construction measures beyond current building code standards	Builder training and verification of code+ measure installations
ENERGY STAR Products	High-efficient heating, water heating and control systems	Varies by product: \$150 up to \$1,500
Home Energy Assistance	Low income air sealing, weatherization and electrical measures	No cost service
Home Energy Reports	Individual energy usage information, comparing performance amongst homes	Free
Home Performance with ENERGY STAR	Audit, air sealing and weatherization measures	50% rebate up to \$4,000
Non-Residential Sector		
Small Business	Boilers, furnaces, water heaters, controls, faucet aerators, pre-rinse spray valves and weatherization measures	Up to 75% of project costs
Large Business	Custom boiler, water heating, steam traps, process, thermal envelope applications & technical assistance	Up to 50% of project costs

The NHSaves programs are adaptable to unique efficiency opportunities, provide turnkey solutions to help identify savings opportunities for customers, and assist with measure installations. The programs have an education and workforce training component, and the utilities engage with numerous market actors such as architects, builders, distributors, installers, product manufacturers, and retailers to help drive customer activity.

Examples of how NHSaves programs are currently benefiting NH customers follows:

- Working with Home Energy Raters and private builders to incent the construction of highly efficient homes using 15-20 percent less energy compared to a standard new home;
- Providing incentives for investments in air-sealing and weatherization in existing homes performed by qualified private contractors to reduce homeowner's heating costs by more than 15 percent;
- Helping income qualified customers receive insulation, air-sealing and other weatherization work, saving them about \$350 per year on energy costs, through our collaboration with the New Hampshire Office of Strategic Initiatives Weatherization Assistance Program and the Community Action Agencies around the state;
- Helping customers invest in highly efficient natural gas products, saving 10 percent to 20 percent of the energy used if they had purchased standard models, by working with equipment distributors, suppliers and heating system contractors across the state to on education, incentive and training programs;
- Helping small and large business and non-profit agencies identify and install more efficient natural gas controls, heating equipment and industrial process equipment. These energy efficiency improvements are implemented in partnership with private contractors throughout the state who help the business sector reduce energy use and save significantly on energy bills, resulting in more money be available to invest in their businesses and agencies;
- Focusing special attention on energy savings opportunities with municipalities which helps to save energy in public buildings, reducing overall costs to taxpayers; and
- Working with local financial institutions to introduce a private lending program to assist customers in making energy efficiency investments and helping better address the up-front cost of projects.

Impact of the NHSaves Programs on Energy Consumption

Table 2-2 summarizes EnergyNorth's annual and lifetime MMBtu savings, customer participation, and program costs and benefits for the period of 2003 through 2016. During this time, over \$46 million in energy efficiency investments have been made, resulting in nearly 22 million lifetime MMBtu savings at a benefit value of almost \$193 million.

Table 2-2: NHSaves Program Results – EnergyNorth, 2003 - 2016

Year	Annual MMBtu Savings	Lifetime MMBtu Savings	EE Measures/ Participants	Utility Costs (000's)	Benefits (000's)
2003	37,668	577,895	2,959	\$929	\$5,085
2004	72,609	1,113,961	3,594	\$1,584	\$9,803
2005	75,700	1,161,377	6,198	\$1,740	\$10,220

Year	Annual MMBtu Savings	Lifetime MMBtu Savings	EE Measures/ Participants	Utility Costs (000's)	Benefits (000's)
2006	84,366	1,294,334	6,396	\$1,830	\$11,390
2007	152,840	2,344,840	5,578	\$1,628	\$20,634
2008	96,930	1,487,083	2,666	\$2,652	\$13,086
2009	120,588	2,095,844	4,110	\$2,485	\$19,000
2010	78,227	1,499,657	4,192	\$3,584	\$16,933
2011	75,747	1,257,675	2,050	\$3,338	\$11,906
2012	148,267	2,046,801	3,214	\$6,226	\$14,659
2013	115,340	1,647,299	2,765	\$4,589	\$16,898
2014	116,946	1,757,567	2,627	\$5,314	\$13,375
2015	144,485	1,878,813	31,180	\$5,177	\$13,976
2016	110,177	1,773,980	31,093	\$4,980	\$16,079
2003 - 2016	1,429,891	21,937,125	108,622	\$46,055	\$193,043

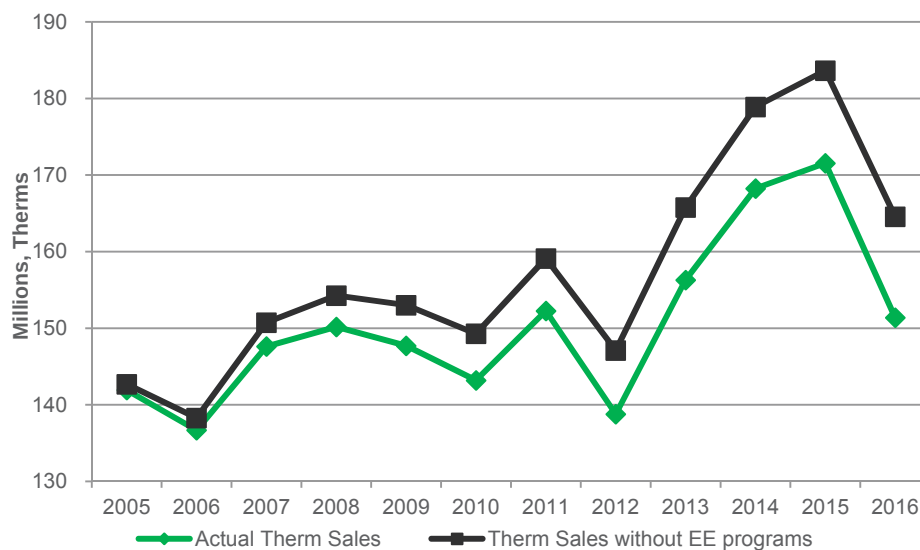
Table 2-3 details EnergyNorth's annual and lifetime MMBtu savings, customer participation, and program cost and benefits by customer program and sector for its most recently completed program year of 2016. Based on these results, the Company saved energy at an average cost of \$0.31 cents¹ per lifetime therm, as compared to the current average Tier 2 retail price per therm of \$0.86, as of September 7, 2016 (New Hampshire Office of Strategic Initiatives). This represents a simple benefit/cost ratio on program investments of 3.1 to 1.

¹ Value calculated by dividing the total program costs and utility performance incentive (\$4,979,871 + \$437,305) by (Lifetime MMBtu savings achieved (1,773,980) x 10 to convert MMBtus to Therms).

Table 2-3: NHSaves Programs Results – EnergyNorth, 2016

Sector/Program	Annual MMBtu Savings	Lifetime MMBtu Savings	EE Measures / Participants	Utility Expenditures (000's)	Benefits (000's)
Residential Sector					
ENERGY STAR Homes	938	23,438	41	\$99	\$1,261
ENERGY STAR Products	16,658	283,075	1,569	\$971	\$2,428
Home Energy Assistance	6,998	142,640	246	\$1,004	\$1,305
Home Energy Reports	9,622	30,030	25,000	\$245	\$227
Home Performance with ENERGY STAR	13,901	311,156	668	\$479	\$2,538
Residential Total	48,116	790,338	27,524	\$2,798	\$7,758
Commercial & Industrial Sector					
Large Business	41,330	633,340	1,162	\$1,362	\$5,823
Small Business	20,732	350,303	2,407	\$796	\$2,498
C&I Education	-	-	-	\$24	-
C&I Total	62,061	983,642	3,569	\$2,182	\$8,321
Overall Total	110,177	1,773,980	\$31,093	\$4,980	\$16,079

The 2016 annual MMBtu savings are approximately 0.73 percent of EnergyNorth's total billed delivery MMBtu sales in 2016 (1,101,770 / 151,496,926). The average life of the installed energy efficiency measures is 16.10 years. Thus, the savings associated with the measures installed in 2016 will continue well into the future and the cumulative impact of the programs will become more significant over time. As illustrated in Figure 2-1, the cumulative impact of the NHSaves Programs over the past twelve years has resulted in a decline of delivered therm sales of 8.7 percent in 2016.

Figure 2-1: Cumulative Impact of NHSaves Program Savings on EnergyNorth Annual Therm Sales

In addition to the direct energy benefits to customers, the NHSaves programs also result in:

- *Reduced Emissions* – energy efficiency measures help decrease energy consumption, which reduces carbon dioxide emissions, airborne mercury, and other harmful pollutants that cause illnesses as power plants burn fewer fossil fuels to meet lower demand. This reduction in emissions helps create various health and well-being benefits including reduced symptoms of respiratory and cardiovascular conditions, rheumatism, arthritis, allergies, and fewer injuries. For reference, the cumulative emission reduction impact of EnergyNorth’s programs from 2003 to date is the equivalent to taking 245,687 passenger vehicles off the road for a year.²
- *Creating jobs* – Spending on energy-efficient technologies and services supports the local workforce. According to a study from the Political Economy Research Institute (PERI) of the University of Massachusetts at Amherst (2012)³, every million dollars spent on energy-efficient measures, such as building retrofits, supports seven direct jobs and 4.9 indirect jobs. Using this calculation, EnergyNorth’s investment in energy efficiency since 2003 supported 547 full time equivalents (FTEs) or 1.1 million work hours (using 2,080 hours for each FTE).
- *Other Non-Energy Impacts* - Those who participate in the NHSaves programs also realize benefits such as improved air quality, increased comfort, improved performance and productivity, reduced maintenance costs, improved building value, and healthier and more comfortable buildings in which to live and work (Figure 2-2). These benefits are particularly important to income-eligible and moderate-income customers, who spend higher portions of their household budgets on energy and housing costs.

² Environmental Protection Agency (2017). “Greenhouse Gas Equivalency Calculator”. Retrieved from <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>; Value computed based on 21,937,125 lifetime MMBtu’s of natural gas saved by EnergyNorth Natural Gas EE programs from 2002 to 2016. Passenger vehicles are defined as 2-axle 4-tire vehicles, including passenger cars, vans, pickup trucks, and sport/utility vehicles.

³ Burr, A., Majerski, C., Stellberg, S., Garrett-Peltier, H. (2012, March). “Analysis of Job Creation and Energy Cost Savings”. Retrieved from http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/PERI-IMT-2012-Analysis_Job_Creation.pdf

Figure 2-2: Additional Benefits from Energy Efficiency

Energy Efficiency Resource Standard

On August 2, 2016, the Commission issued Order 25,932 and adopted an Energy Efficiency Resource Standard (“EERS”), which established energy savings goals as a percentage of the NH Utilities’ retail sales. This order set increasing energy efficiency goals and provided a funding mechanism to reach these new goals. The approved EERS framework consists of 3-year planning periods with associated savings goals and a long-term goal to pursue all cost-effective energy efficiency opportunities and measures.

The cumulative energy savings goal over the 3-year planning period is 2.25 percent of retail natural gas sales, relative to a 2014 baseline. When compared to the previous three years of 2015, 2016, and 2017, the statewide NHSaves programs goals for the New Hampshire Utilities for 2018, 2019, and 2020 will increase by approximately 78,000 MMBtu.

The EERS will allow the New Hampshire Utilities to reach more customers and also drive expanded partnerships to achieve more comprehensive energy efficiency. New initiatives to achieve these goals include a residential energy audit option, a financing option for moderate income residents, new measure offerings in both residential and commercial programs, and multi-year energy planning to encourage long-term energy savings projects among large commercial customers.

Table 2-4 below depicts a comparison of the proposed program targets and funding levels for the Company under the new EERS over the 2018-2020 period as part of Docket No. DE 17-136,⁴ and the previous three-year period.

Table 2-4: Comparison to Previous 3-Year Period

EnergyNorth Programs	2015-2017	2018-2020
Cumulative Lifetime MMBtu Savings	5,108,388	5,851,269
Cumulative Annual MMBtu Savings	351,973	415,081
Cumulative Annual Savings as a % of 2014 Delivery Sales	2.17%	2.55%
Cumulative Program Funding	\$18,063,490	\$24,769,671
Program Cost per Lifetime MMBTU Savings	\$3.54	\$4.23

⁴ New Hampshire Public Utilities Commission, DE 17-136 (September 1, 2017). "2018-2020 New Hampshire Statewide Energy Efficiency Plan." Retrieved from http://www.puc.state.nh.us/Regulatory/Docketbk/2017/17-136/INITIAL%20FILING%20-%20PETITION/17-136_2017-09-01_NHUTILITIES_EE_PLAN.PDF

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APPENDIX 3

Description of the Daily Regression Model

The Company developed a linear-regression equation using data for the reference-year period April 1, 2016, through March 31, 2017. Its regression equation uses daily sales and capacity-assigned volumes as its dependent variable and temperature as its independent variable.¹

Normalized daily sendout is calculated using that regression equation. Specifically, the actual daily firm sendout is regressed against HDD data, HDD data lagged over two days, and a weekend dummy variable. These variables were selected for the regression analysis because, based on the Company's experience, they are relevant explanatory variables underlying daily sales and capacity-assigned volumes.

The Manchester, New Hampshire weather station is the source of the weather data that is used as the principal explanatory variable in its regression equations. The Manchester weather station was selected because it is close to the center of the Company's service territory, on a load-weighted basis. Specifically, the HDD value for each 24-hour period of 10 a.m. to 10 a.m. (i.e., the gas day) corresponds to the same daily period of observations of the sendout data.

After reviewing the historical relationship (and results of the regression analyses) between sales and capacity-assigned volumes and HDD over the split years 2006/07 through 2016/17 (see Table 3-1, below), the Company decided to estimate the regression equation as a segmented model. A segmented model is a "regression model where the relationships between the response and one or more explanatory variables are piecewise linear, namely represented by two or more straight lines connected at unknown values: these values are usually referred as breakpoints."² That is, the model may have a different slope before and after a breakpoint. Since a significant portion of the Company's sendout is due to spaceheating usage and spaceheating only occurs when average air temperatures fall below a certain level, the segmented model was used for modeling the relationship between daily sales and capacity-assigned volumes and HDD. Stated differently, as the air temperature falls to a certain level (i.e., a breakpoint), customers' usage patterns change. To reflect that relationship, a segmented model was used. This form of regression equation is the same that the Company used in its 2010 and 2013 Integrated Resource Plans (DG 10-041 and DG 13-313).

Frequency plots were created to review the relationship between customer usage and the day of the week. From the frequency plots (periodogram) of the residuals of the sales and capacity-assigned volumes vs. HDD regression, the Company continues to observe a significant peak at frequency 0.14 (and its harmonic at 0.28), which indicates a correlation in the error term once in 1/0.14, or seven days, confirming the Company's observations that weekday and weekend sendout requirements are different at similar HDD levels. Examining the average of the residuals by day of the week, the Company again used a second independent variable, a weekday/weekend dummy variable set to zero for Mondays through Thursdays, one on Fridays and Sundays, and two on Saturdays. The introduction of this second independent variable adds an incremental improvement in the adjusted R² of the equations and, more importantly, eliminates the seven-day correlation of the residuals. The sign of the coefficient (negative)

¹ Sendout includes both sales and capacity-assigned transportation customer requirements.

² Segmented: an R package to fit regression models with broken-line relationships, R News, Volume 8/1, May 2008, page 20.

implies that there is a reduction in sendout on weekend days versus weekday days at similar temperatures, as has been observed by the Company.

Again, the Company observed a correlation between lagged temperature and the residuals of the above equation and it investigated adding a third independent variable. Its three choices were: (1) the difference between HDD on day t and HDD on day $t-1$, (2) the difference between HDD on day t and mean of the HDD on day $t-1$ and day $t-2$, or (3) the difference between HDD on day t and the mean of the HDD on day $t-1$ and day $t-2$ and day $t-3$. The differences were used in lieu of the actual lagged values to avoid correlation among the independent variables. The Company chose option (2) as the optimal additional independent variable. The underlying theory of this analysis is that heating requirements increase as two consecutive days of cold weather occur, which cools down structures to a greater degree than would be experienced on a single day. The negative sign of the coefficient implies that, if a day is colder than the average of the previous two days, the increase in sendout will be somewhat lower than what would be forecast without the coefficient, and vice versa.

The table below lists the coefficients for the final regression equation form. As noted above, the 2016/17 regression equation was used to allocate its monthly forecast volumes to its daily forecast volumes. In the table below, Intercept is the Dth sendout predicted at HDD=0, Slope1 is the Dth/HDD usage below the Breakpoint HDD level, Slope2 is the incremental Dth/HDD usage above the Breakpoint HDD level, the Standard Error is expressed in Dth, and the Breakpoint HDD is the HDD value at which spaceheating equipment is observed to turn on. The signs of the Slope1 and Slope2 coefficients (positive) imply that as temperatures get colder and HDD increases in value, then sendout will increase, which agrees with what the Company observes.

Table 3-1: Daily Segmented Regression Model Results

Split Year	Intercept	Slope1	Slope2	Weekend	Lagged Delta HDD	Standard Error	Adjusted R ²	Breakpoint HDD
2006/07	13821.97	332.57	1640.84	-1988.96	-230.03	2577	0.9904	10.24
2007/08	12691.10	323.95	1598.45	-1692.66	-260.81	2479	0.9911	9.245
2008/09	12966.30	381.04	1571.44	-2042.38	-317.73	2511	0.9918	10.247
2009/10	12351.09	324.77	1693.18	-2015.95	-271.09	2688	0.9882	10.202
2010/11	13017.19	317.34	1597.81	-2280.08	-273.08	2587	0.9911	9.592
2011/12	13057.03	384.43	1604.85	-2351.78	-306.33	2502	0.9880	10.022
2012/13	13446.66	350.30	1764.66	-2250.40	-318.18	2867	0.9882	10.609
2013/14	12934.94	337.58	1569.72	-1660.49	-342.18	3380	0.9869	8.622
2014/15	14383.78	403.82	1435.11	-2169.73	-314.66	5123	0.9695	8.793
2015/16	16040.07	433.66	1944.89	-2748.38	-488.13	5224	0.9667	8.933
2016/17	15605.63	449.13	1774.94	-2051.89	-421.72	4102	0.9801	9.516

The table above sets forth the 2016/17 regression coefficients for EnergyNorth. The functional form of the equation, in pseudocode, is:


```
Sendout = Intercept Coefficient +
Weekend Dummy Coefficient * Weekend Dummy Variable +
Slope1 Coefficient * min(HDD~t~, Breakpoint HDD) +
if(HDD~t~<=Breakpoint HDD) {0} else {(Slope1 Coefficient + Slope2 Coefficient) *
(HDD~t~ - Breakpoint HDD)} +
Lagged Delta HDD Coefficient * (HDD~t~ - average(HDD~t-1~, HDD~t-2~))
```

As seen above, the adjusted R² value for the 2016/17 regression is 0.980, and all the t-statistics of the independent variables are greater than 2.0, indicating that these variables are significant at the 95-percent level.

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APPENDIX 4

Description of the Monte Carlo Analysis

A Monte Carlo simulation method was used to generate synthetic daily HDD values for Manchester, NH for purposes of establishing its Design Year planning standards. The application of the Monte Carlo method allows for a much larger time series of daily temperature values on which to base the planning standards.

The Monte Carlo methodology generally implies the generation of a dataset of synthetic values, larger than a given dataset of actual observations, based on the observed statistical properties of the actual dataset. The larger size of the synthetic dataset (4,096 simulated years) can assist in the determination of a better approximation of average expected temperatures (i.e., normal weather) as well as the likelihood of extreme weather events, such as those the Company seeks to define in its design standards.

In developing a time series of daily temperature values much larger than the Company's existing actual historical observations from 1979 through 2016, specific consideration had to be given than to generate 365 random values for each year of the synthetic dataset. First, consideration of the seasonality of temperature values had to be given. Second, consideration of the interdependence of one day's temperature value with the prior day's value had to be given, as well. To generate its set of synthetic data values, the Company chose to model its temperature data using a first-order autoregressive process (denoted AR(1)).

Letting X_t denote the temperature value on the t^{th} day, the AR(1) process requires that the conditional probability distribution of X_t , given the past record of observed temperatures, $X_{t-1}, X_{t-2}, \dots$, depends only on X_{t-1} , the observed temperature value for the previous day. This property can be expressed as:

$$X_t - \mu = \Phi(X_{t-1} - \mu) + \varepsilon_t, \quad (1)$$

where the daily temperature values are expressed in terms of deviations from their common mean μ , and Φ denotes the first-order autocorrelation coefficient. The error terms (ε_t) in equation (1) are assumed to constitute a "white-noise process"; that is, they are uncorrelated random variables with zero mean and constant variance σ_ε^2 . It is further assumed that the ε_t are normally distributed [denoted $N(0, \sigma_\varepsilon^2)$].

The first-order autocorrelation coefficient Φ measures the degree of dependence between the temperature values on consecutive days, X_{t-1} and X_t . A value of $\Phi = 0$ implies that X_{t-1} and X_t are uncorrelated (i.e., X_t is completely unpredictable from the past record of daily temperatures), whereas a value of $\Phi = 1$ or -1 implies that the X_t are perfectly correlated (i.e., X_t is completely predictable). For daily temperature time series, typically $0 < \Phi < 1$, meaning that the X_t are positively, but not perfectly, correlated. An AR(1) process is stationary (i.e., all the joint probability distributions of the X_t are time invariant) if $|\Phi| < 1$.

The requirement that the error term ε_t is normally distributed implies that the daily temperature X_t also is normally distributed. Letting σ^2 denote the variance of X_t , it is straightforward to show that σ^2 is related to σ_ε^2 , the variance of an error term, by

$$\sigma_\varepsilon^2 = (1 - \Phi^2) \sigma^2 \quad (2)$$

We see by equation (2), that the stronger the dependence between X_{t-1} and X_t , the greater the reduction in the variance of an error term relative to the variance of daily temperature. More importantly, (2) implies that an AR(1) process can be completely characterized in terms of three parameters, μ , Φ and σ^2 .

The Company used the dataset of thirty-eight calendar years of daily average air temperature (in °F; 1977 through 2016) at the Manchester, NH airport as the source data for its Monte Carlo analysis. For the purposes of this analysis, the data for leap days were removed. To begin its analysis, the Company determined the annual (365-day) cycle in the dataset Fourier analysis and removed it from the input dataset (i.e. it “deseasonalized” the temperature pattern over the course of the year) to conduct its analysis on the variations in temperature about the long-term mean values. The Company then calculated Φ , the first-order autocorrelation coefficient, over the entire dataset of deseasonalized daily average temperatures. For each calendar day, the Company then computed the mean and standard deviation values (32 observations per day) to establish the μ and σ^2 parameters required for its AR(1) process.

To create 4,096 years of synthetic daily temperature time series, the Company generated 365 random HDD deviation values (January 1st – December 31st) denoted by $X'1$, $X'2$, ..., $X'365$, from the AR(1) process. The initial daily temperature deviation value (for the day of January 1st), $X'1$ was produced from the $N(\mu, \sigma^2)$ normal distribution by means of a random number generator. Each subsequent daily temperature deviation value, $X'n$, was produced using Equations (1) and (2) from the $N(\mu, \sigma^2)$ normal distribution by means of a random number generator and the first-order autocorrelation coefficient Φ . Finally, the entire Monte Carlo data series was re-seasonalized by adding back in the 365-day seasonal component removed at the beginning of the analysis.

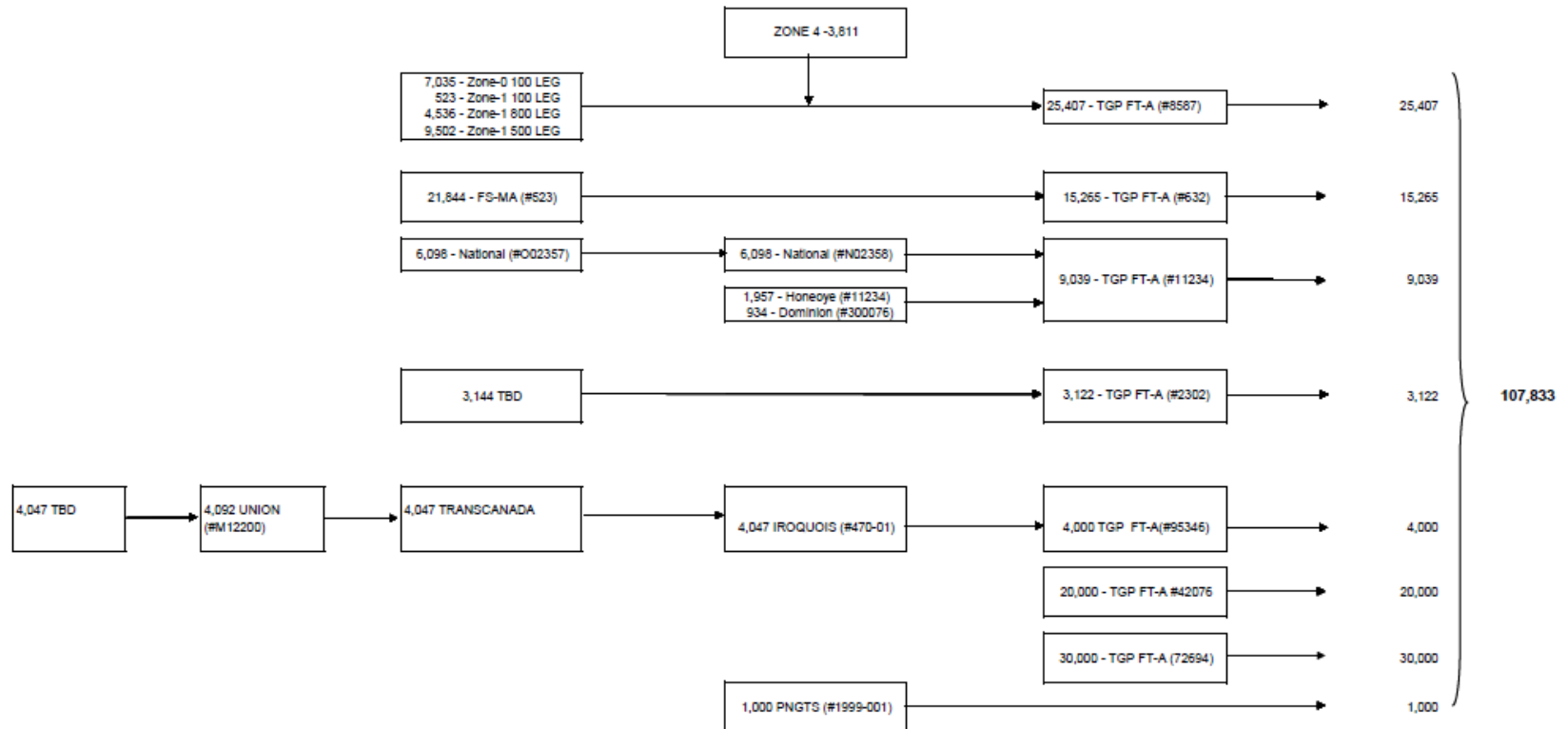
The results of the Monte Carlo analysis establish the mean expected annual HDD as approximately 6,314 with a standard deviation of approximately 277 HDD.

The results of the Monte Carlo analysis establish the mean expected coldest day as 4.27 °F (60.73 HDD) with a standard deviation of 5.33 °F.

APPENDIX 5

Existing Supply Resource Portfolio

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
 Transportation Available for Pipeline Supply and Storage
 (MMBtu)



APPENDIX 5 EXISTING RESOURCE PORTFOLIO

LIBERTY UTILITIES (ENERGYNORTH NATURAL GAS) CORP.
Transportation Available for Pipeline Supply and Storage
(MMBtu)
Agreements for Gas Supply and Transportation

SOURCE	RATE SCHEDULE	CONTRACT NUMBER	TYPE	MDG MMBTU	MAQ * MMBTU	EXPIRATION DATE	NOTIFICATION DATE	RENEWAL OPTIONS
Niagara	NA	NA	Supply	3,147	1,148,655	3/31/2018	N/a	Terminates
ANE	NA	NA	Supply	4,047	611,097	Peak Only	N/a	Terminates
ENGIE	FCS		Firm Combination Liquid and Vapor Svc	Up to 7 trucks	630,000	3/31/2018 Peak Only	-	Terminates
Dracut or Z5	NA	NA	Supply	Up to 20,000 / day	1,412,000	2/28/2018	-	Terminates
TGP Long-Haul	NA	NA	Supply	21,596	3,908,876	4/30/2018	N/a	Terminates
Northern Transport	NA	NA	Trucking	28,500 Gallons	900,000 Gallons		N/a	Terminates
Dominion Transmission Incorporated	GSS	300076	Storage	934	102,700	3/31/2021	3/31/2019	Mutually agreed upon
Honeywell Storage Corporation	SS-NY	11234	Storage	1,957	245,380	3/31/2020	12 months notice	Evergreen Provision
National Fuel Gas Supply Corporation	FSS	002358	Storage	6,098	670,800	3/31/2019	3/31/2018	Evergreen Provision
National Fuel Gas Supply Corporation	FSST	N02358	Transportation	6,098	670,800	3/31/2019	3/31/2018	Evergreen Provision
Iroquois Gas Transmission System	RTS	47001	Transportation	4,047	1,477,155	11/1/2018	11/1/2017	Evergreen Provision
Portland Natural Gas Transmission System	FT 1999-01	1999-001	Transportation	1,000	365,000	10/31/2019	10/31/2018	Evergreen Provision
Tennessee Gas Pipeline Company	FS-MA	523	Storage	21,844	1,560,391	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	8587	Transportation	25,407	9,273,555	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	2302	Transportation	3,122	1,139,530	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	632	Transportation	15,265	5,571,725	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	11234	Transportation	9,039	3,299,235	10/31/2020	10/31/2019	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	72694	Transportation	30,000	10,950,000	10/31/2029	10/31/2029	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	95346	Transportation	4,000	1,460,000	11/30/2021	11/30/2020	Evergreen Provision
Tennessee Gas Pipeline Company	FTA	42076	Transportation	20,000	7,300,000	10/31/2020	10/31/2019	Evergreen Provision
TransCanada Pipeline	FT	41232	Transportation	4,047	1,477,155	10/31/2022	10/31/2020	Evergreen Provision
Union Gas Limited	M12	M12200	Transportation	4,092	1,493,580	10/31/2022	10/31/2020	Evergreen Provision

* MAQ is calculated on a 365 day calendar year.

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	55740	Injection Cost	48	Transportation Cost	2311	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	156.82
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	156.82
Total Variable	55767	Total Variable	94	Total Variable	2311		
Demand/Reservation Co	11129	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11224	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	66991	Net Storage Cost	1762	Net Trans Cost	17620	Total Gas Cost	86374
						Total Revenue	0
						Net Cost	86374

Avg Cost of Served Demand 5.525 USD/DT
 (System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.221 USD/DT
 (Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	15634.1	0.0	15634.1	0.0	15634.1	15634.1	0.0	0	156.8	0.0	
Total	15634.1	0.0	15634.1	0.0	15634.1	15634.1	0.0	0	156.8	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2377.8	18250.0	15872.2			3.0110	7160	0	7160	3.0110
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	80.8	91.7	10.9			15.0000	1212	0	1212	15.0000
ENG-Z4	6570.3	6690.4	120.1			2.3201	15243	0	15243	2.3201
Dracut 20	210.6	7300.0	7089.4			6.5638	1382	0	1382	6.5638
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	764.2	2190.0	1425.8			3.1700	2423	0	2423	3.1700

125

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 09:24:14

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	662.2	662.2	0.0							
Dracut 30	3255.4	10950.0	7694.6			6.1858	20137	0	20137	6.1858
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	15872.0						55767	11224	66991	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	240.9	241.5	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	149.9	149.9	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1774.0	1739.4	0	19.0	1498	96	0.0	16	2573	3509	936
ENGDominion	103	100	108.8	106.7	0	2.1	103	100	0.0	0	178	242	64
ENGNGFG	671	100	725.3	719.6	0	5.7	671	100	5.7	0	1164	1599	435
ENGHON	246	100	236.9	236.9	0	0.0	246	100	0.0	0	427	552	125
Total	2592	97	3235.8	3193.9	0	26.8	2607	98	5.7	15	5426	6939	1513

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2377.8	0.0	2377.8	7882.5	5504.7	0	5043	0	5043	2.1210
ENG TGP2Stg	107.8	2.2	105.6	7882.5	7777.0	28	0	0	28	0.2572
ENG TGPLong	5996.1	0.0	5996.1	8698.1	2702.0	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2796.9	23.8	2773.1	10262.0	7488.9	315	2688	0	3003	1.0736
TrCanCharges	755.5	8.7	746.8	1477.2	730.3	0	698	0	698	0.9233
IroqCharges	746.8	4.6	742.2	1460.0	717.8	66	640	0	706	0.9454
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.5	0.0	241.5	8654.9	8413.4	0	0	0	0	0.0000
ENGPropane	149.9	0.0	149.9	6335.0	6185.1	0	0	0	0	0.0000
ENG C3Truck	149.9	0.0	149.9	4380.0	4230.1	150	0	0	150	1.0000
Dracut 30	2819.2	5.9	2813.3	10950.0	8136.7	122	4388	0	4511	1.6000
UnionCharges	764.2	8.7	755.5	1477.2	721.6	0	140	0	140	0.1832
Dracut 20	650.8	1.4	649.4	7300.0	6650.6	28	1134	0	1162	1.7854

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2270.1	63.3	2206.8	9125.0	6918.2	675	0	0	675	0.2976
Z4toTGPLH	3821.8	32.5	3789.3	7665.0	3875.7	430	0	0	430	0.1126
Z4toStg	2748.5	9.1	2739.4	7882.5	5143.1	136	0	0	136	0.0495
Engie2CG	410.1	1.1	409.0	1057.0	648.0	14	0	0	14	0.0334
██████████	638.3	1.3	637.0	5810.5	5173.5	28	0	0	28	0.0434
Repsol2Drac	658.1	19.7	638.3	5822.7	5184.4	0	0	0	0	0.0000
██████████	4.1	0.1	4.0	15.9	11.9	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
Engie2ENGLNG	219.9	0.0	219.9	2920.0	2920.0	0	0	0	0	0.0000
Dawn2Dracut	0.0	0.0	0.0	1057.0	837.1	220	0	0	220	1.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		190.4				2311	15309		17620	0.5961

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	55781	Injection Cost	48	Transportation Cost	2349	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	160.99
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	160.99
Total Variable	55808	Total Variable	94	Total Variable	2349		
Demand/Reservation Co	11129	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11224	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	67032	Net Storage Cost	1762	Net Trans Cost	17659	Total Gas Cost	86453
						Total Revenue	0
						Net Cost	86453

Avg Cost of Served Demand 5.378 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.112 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	16075.2	0.0	16075.2	0.0	16075.2	16075.2	0.0	0	161.0	0.0
Total	16075.2	0.0	16075.2	0.0	16075.2	16075.2	0.0	0	161.0	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2399.6	18250.0	15850.4			2.9029	6966	0	6966	2.9029
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	86.8	91.7	5.0			15.0000	1302	0	1302	15.0000
ENG-Z4	6614.7	6690.4	75.7			2.1146	13987	0	13987	2.1146
Dracut 20	288.5	7300.0	7011.5			6.7489	1947	0	1947	6.7489
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	839.2	2190.0	1350.8			2.9126	2444	0	2444	2.9126

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 09:24:14

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	662.2	662.2	0.0							
Dracut 30	3460.3	10950.0	7489.7			6.1833	21396	0	21396	6.1833
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	16302.0						55808	11224	67032	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.5	241.5	0	0.0	12	95	0.0	0	57	55	-2
ENGPropane	77	100	155.9	155.9	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3509	3139	-370
ENGDomion	103	100	109.1	107.0	0	2.1	103	100	0.0	0	242	221	-21
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1599	1434	-166
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	552	519	-34
Total	2607	98	3237.4	3210.6	0	26.8	2607	98	5.6	0	6939	6347	-592

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2399.6	0.0	2399.6	7882.5	5482.9	0	5043	0	5043	2.1017
ENG TG P2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TG PLong	6066.3	0.0	6066.3	8698.1	2631.8	0	0	0	0	0.0000
ENG TG PBNB	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TG PShort	2807.6	23.9	2783.7	10262.0	7478.3	316	2688	0	3004	1.0699
TrCanCharges	829.7	9.5	820.1	1477.2	657.0	0	698	0	698	0.8408
IroqCharges	820.1	5.1	815.0	1460.0	645.0	73	640	0	713	0.8688
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.5	0.0	241.5	8654.9	8413.4	0	0	0	0	0.0000
ENGPropane	155.9	0.0	155.9	6335.0	6179.1	0	0	0	0	0.0000
ENG C3Truck	155.9	0.0	155.9	4380.0	4224.1	156	0	0	156	1.0000
Dracut 30	2980.0	6.3	2973.7	10950.0	7976.3	129	4388	0	4518	1.5160
UnionCharges	839.2	9.6	829.7	1477.2	647.5	0	140	0	140	0.1668
Dracut 20	772.9	1.6	771.3	7300.0	6528.7	34	1134	0	1167	1.5101

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2293.3	63.9	2229.4	9125.0	6895.6	682	0	0	682	0.2976
Z4toTGPLH	3869.8	32.9	3836.9	7665.0	3828.1	436	0	0	436	0.1126
Z4toStg	2744.9	9.1	2735.9	7882.5	5146.7	136	0	0	136	0.0495
Engie2CG	409.5	1.1	408.4	1057.0	648.6	14	0	0	14	0.0334
██████████	638.1	1.3	636.8	5810.5	5173.7	28	0	0	28	0.0434
██████████	657.8	19.7	638.1	5822.7	5184.6	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.5	0.0	220.5	1057.0	836.5	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		194.3				2349	15309		17659	0.5839

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	56400	Injection Cost	48	Transportation Cost	2377	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	164.64
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	164.64
Total Variable	56427	Total Variable	94	Total Variable	2377		
Demand/Reservation Co	11129	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11224	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	67651	Net Storage Cost	1762	Net Trans Cost	17686	Total Gas Cost	87099
						Total Revenue	0
						Net Cost	87099

Avg Cost of Served Demand 5.255 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.025 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	16575.5	0.0	16575.5	0.0	16575.5	16575.5	0.0	0	164.6	0.0	
Total	16575.5	0.0	16575.5	0.0	16575.5	16575.5	0.0	0	164.6	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2373.9	18300.0	15926.1			2.7913	6626	0	6626	2.7913
ENGNiagara	1143.8	1170.5	26.7			2.1356	2443	0	2443	2.1356
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6654.4	6698.7	44.3			1.9745	13139	0	13139	1.9745
Dracut 20	373.9	7320.0	6946.1			6.5717	2457	0	2457	6.5717
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	941.4	2196.0	1254.6			2.7962	2632	0	2632	2.7962

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 09:24:14

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	662.2	662.2	0.0							
Dracut 30	3759.9	10980.0	7220.1			6.0322	22680	0	22680	6.0322
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	16805.6						56427	11224	67651	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.6	241.6	0	0.0	12	95	0.0	0	55	54	-0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3139	2992	-148
ENGDominion	103	100	109.7	107.6	0	2.1	103	100	0.0	0	221	210	-11
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1434	1363	-71
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	519	492	-26
Total	2607	98	3243.1	3216.2	0	26.8	2607	98	5.6	0	6347	6091	-256

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	2373.9	0.0	2373.9	7904.1	5530.3	0	5043	0	5043	2.1245
ENG TGP2Stg	106.4	2.2	104.2	7904.1	7800.0	27	0	0	27	0.2572
ENG TGPLong	6080.0	0.0	6080.0	8719.7	2639.7	0	0	0	0	0.0000
ENG TGPNBD	1143.8	7.1	1136.7	1142.7	5.9	98	267	0	365	0.3191
ENG TGPShort	2808.2	23.9	2784.3	10290.1	7505.8	316	2688	0	3004	1.0697
TrCanCharges	930.7	10.7	920.0	1481.2	561.2	0	698	0	698	0.7496
IroqCharges	920.0	5.7	914.3	1464.0	549.7	82	640	0	721	0.7842
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990
ENGLNG	241.6	0.0	241.6	8678.6	8437.0	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6370.0	6209.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4392.0	4231.2	161	0	0	161	1.0000
Dracut 30	3202.0	6.7	3195.2	10980.0	7784.8	139	4388	0	4527	1.4139
UnionCharges	941.4	10.7	930.7	1481.2	550.5	0	140	0	140	0.1487
Dracut 20	936.2	2.0	934.2	7320.0	6385.8	41	1134	0	1174	1.2544

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2267.5	63.2	2204.3	9150.0	6945.7	675	0	0	675	0.2976
Z4toTGPLH	3908.9	33.2	3875.7	7686.0	3810.3	440	0	0	440	0.1126
Z4toStg	2745.5	9.1	2736.5	7904.1	5167.7	136	0	0	136	0.0495
Engie2CG	409.4	1.1	408.3	1064.0	655.7	14	0	0	14	0.0334
██████████	638.0	1.3	636.7	5826.4	5189.8	28	0	0	28	0.0434
██████████	657.7	19.7	638.0	5838.7	5200.7	0	0	0	0	0.0000
Repsol2Drac	4.4	0.1	4.3	16.0	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2928.0	2928.0	0	0	0	0	0.0000
Engie2ENGLNG	220.6	0.0	220.6	1064.0	843.4	221	0	0	221	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		197.6				2377	15309		17686	0.5716

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	59123	Injection Cost	48	Transportation Cost	2397	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	168.93
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	168.93
Total Variable	59151	Total Variable	94	Total Variable	2397		
Demand/Reservation Co	11129	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11224	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	70374	Net Storage Cost	1762	Net Trans Cost	17707	Total Gas Cost	89843
						Total Revenue	0
						Net Cost	89843

Avg Cost of Served Demand 5.285 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.083 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	17000.6	0.0	17000.6	0.0	17000.6	17000.6	0.0	0	168.9	0.0
Total	17000.6	0.0	17000.6	0.0	17000.6	17000.6	0.0	0	168.9	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2366.2	18250.0	15883.8			2.8097	6648	0	6648	2.8097
ENGNiagara	1142.6	1167.3	24.6			2.1441	2450	0	2450	2.1441
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6658.3	6690.4	32.1			1.9829	13203	0	13203	1.9829
Dracut 20	506.5	7300.0	6793.5			6.7139	3400	0	3400	6.7139
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	1035.4	2190.0	1154.6			2.7763	2874	0	2874	2.7763

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx Page 11
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 09:24:14

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	662.2	662.2	0.0							
Dracut 30	3966.9	10950.0	6983.1			6.0871	24147	0	24147	6.0871
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17233.9						59151	11224	70374	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.5	241.5	0	0.0	12	95	0.0	0	54	54	0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	2992	3017	25
ENGDomion	103	100	108.5	106.4	0	2.1	103	100	0.0	0	210	212	2
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1363	1375	12
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	492	491	-1
Total	2607	98	3240.6	3213.8	0	26.8	2607	98	5.6	0	6091	6129	38

Transportation Summary										
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2366.2	0.0	2366.2	7882.5	5516.3	0	5043	0	5043	2.1313
ENG TGP2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6078.8	0.0	6078.8	8698.1	2619.3	0	0	0	0	0.0000
ENG TGPNBD	1142.6	7.1	1135.6	1139.5	4.0	98	267	0	365	0.3193
ENG TGPShort	2805.8	23.8	2782.0	10262.0	7480.0	316	2688	0	3004	1.0705
TrCanCharges	1023.6	11.8	1011.8	1477.2	465.4	0	698	0	698	0.6815
IroqCharges	1011.8	6.3	1005.5	1460.0	454.5	90	640	0	730	0.7210
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.5	0.0	241.5	8654.9	8413.4	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3469.5	7.3	3462.2	10950.0	7487.8	151	4388	0	4539	1.3083
UnionCharges	1035.4	11.8	1023.6	1477.2	453.6	0	140	0	140	0.1352
Dracut 20	1008.2	2.1	1006.1	7300.0	6293.9	44	1134	0	1177	1.1679

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2259.9	63.0	2196.9	9125.0	6928.1	672	0	0	672	0.2976
Z4toTGPLH	3915.2	33.3	3881.9	7665.0	3783.1	441	0	0	441	0.1126
Z4toStg	2743.1	9.1	2734.1	7882.5	5148.5	136	0	0	136	0.0495
Engie2CG	409.5	1.1	408.4	1057.0	648.6	14	0	0	14	0.0334
██████████	638.0	1.3	636.7	5810.5	5173.9	28	0	0	28	0.0434
Repsol2Drac	657.7	19.7	638.0	5822.7	5184.7	0	0	0	0	0.0000
██████████	4.4	0.1	4.3	15.9	11.6	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.5	0.0	220.5	1057.0	836.5	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		200.9				2397	15309		17707	0.5613

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	62914	Injection Cost	48	Transportation Cost	2426	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	173.92
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	173.92
Total Variable	62941	Total Variable	94	Total Variable	2426		
Demand/Reservation Co	11129	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11224	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	74165	Net Storage Cost	1762	Net Trans Cost	17736	Total Gas Cost	93663
						Total Revenue	0
						Net Cost	93663

Avg Cost of Served Demand 5.344 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.179 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17527.6	0.0	17527.6	0.0	17527.6	17527.6	0.0	0	173.9	0.0	
Total	17527.6	0.0	17527.6	0.0	17527.6	17527.6	0.0	0	173.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2373.4	18250.0	15876.6			2.8356	6730	0	6730	2.8356
ENGNiagara	1144.1	1167.3	23.1			2.1910	2507	0	2507	2.1910
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6665.3	6690.4	25.1			2.0468	13642	0	13642	2.0468
Dracut 20	669.9	7300.0	6630.1			7.1021	4758	0	4758	7.1021
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	1122.6	2190.0	1067.4			2.7870	3129	0	3129	2.7870

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 09:24:14

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	662.2	662.2	0.0							
Dracut 30	4215.6	10950.0	6734.4			6.1037	25731	0	25731	6.1037
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17748.9						62941	11224	74165	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.2	241.2	0	0.0	12	95	0.0	0	54	55	1
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1759.8	1756.5	0	18.8	1482	95	0.0	-16	3017	3087	70
ENGDomion	103	100	108.5	106.3	0	2.1	103	100	0.0	0	212	219	7
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1375	1418	43
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	491	505	14
Total	2607	98	3224.5	3213.4	0	26.6	2591	97	5.6	-16	6129	6263	135

Transportation Summary										
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2373.4	0.0	2373.4	7882.5	5509.2	0	5043	0	5043	2.1249
ENG TGP2Stg	106.3	2.2	104.1	7882.5	7778.4	27	0	0	27	0.2572
ENG TGP Long	6108.4	0.0	6108.4	8698.1	2589.7	0	0	0	0	0.0000
ENG TGP BND	1144.1	7.1	1137.0	1139.5	2.5	98	267	0	365	0.3190
ENG TGP Short	2805.7	23.8	2781.9	10262.0	7480.1	316	2688	0	3004	1.0706
TrCanCharges	1109.8	12.8	1097.1	1477.2	380.1	0	698	0	698	0.6285
IroqCharges	1097.1	6.8	1090.3	1460.0	369.7	97	640	0	737	0.6719
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.2	0.0	241.2	8654.9	8413.7	0	0	0	0	0.0000
ENG Propane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3704.2	7.8	3696.5	10950.0	7253.5	161	4388	0	4549	1.2281
UnionCharges	1122.6	12.8	1109.8	1477.2	367.3	0	140	0	140	0.1247
Dracut 20	1185.7	2.5	1183.2	7300.0	6116.8	51	1134	0	1185	0.9996

138

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2267.1	63.2	2203.9	9125.0	6921.1	675	0	0	675	0.2976
Z4toTGPLH	3938.0	33.5	3904.5	7665.0	3760.5	444	0	0	444	0.1126
Z4toStg	2727.3	9.0	2718.3	7882.5	5164.2	135	0	0	135	0.0495
Engie2CG	409.8	1.1	408.7	1057.0	648.3	14	0	0	14	0.0334
██████████	637.9	1.3	636.6	5810.5	5174.0	28	0	0	28	0.0434
██████████	657.6	19.7	637.9	5822.7	5184.8	0	0	0	0	0.0000
Repsol2Drac	4.6	0.1	4.4	15.9	11.5	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.2	0.0	220.2	1057.0	836.8	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		204.6				2426	15309		17736	0.5497

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx Page 16
SENDOUT® Version 14.1.1 REP 1z 15-Sep-2017
Report 1z 09:24:14

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	289959	Injection Cost	238	Transportation Cost	11861	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	230	Other Variable Cost	0	System Served	173.92
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	173.92
Total Variable	290094	Total Variable	469	Total Variable	11861		
Demand/Reservation Co	55646	Demand Cost	3477	Demand Cost	76547		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	56119	Total Fixed	8343	Total Fixed	76547		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	346213	Net Storage Cost	8812	Net Trans Cost	88408	Total Gas Cost	443432
						Total Revenue	0
						Net Cost	443432

Avg Cost of Served Demand 5.355 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.123 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	82813.0	0.0	82813.0	0.0	82813.0	82813.0	0.0	0	173.9	0.0	
Total	82813.0	0.0	82813.0	0.0	82813.0	82813.0	0.0	0	173.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11890.9	91300.0	79409.1			2.8703	34130	0	34130	2.8703
ENGNiagara	5723.9	5839.5	115.7			2.2008	12597	0	12597	2.2008
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	442.8	458.7	15.9			15.0000	6642	0	6642	15.0000
ENG-Z4	33163.0	33460.3	297.3			2.0871	69215	0	69215	2.0871
Dracut 20	2049.3	36520.0	34470.7			6.8044	13944	0	13944	6.8044
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DLiqSummer	105.0	105.0	0.0							
ENG Dawn	4702.8	10956.0	6253.2			2.8711	13503	0	13503	2.8711

140

APPENDIX 6.A.1 BASE CASE NORMAL YEAR RESOURCE MIX

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1z 15-Sep-2017
Report 1z (Continued) 09:24:14

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	3310.9	3310.9	0.0							
Dracut 30	18658.0	54780.0	36122.0			6.1148	114091	0	114091	6.1148
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	83962.4						290094	56119	346213	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1206.6	1207.2	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	788.3	788.3	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8860.4	8765.5	0	94.8	1482	95	0.0	0	2573	3087	514
ENGDomion	103	100	544.7	534.0	0	10.6	103	100	0.0	0	178	219	41
ENGNGFG	671	100	3608.8	3580.3	0	28.5	671	100	28.3	0	1164	1418	254
ENGHON	246	100	1172.6	1172.6	0	0.0	246	100	0.0	0	427	505	78
Total	2592	97	16181.3	16047.9	0	133.9	2591	97	28.3	-1	5426	6263	837

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	11890.9	0.0	11890.9	39434.3	27543.4	0	25216	0	25216	2.1206
ENG TGP2Stg	533.1	10.9	522.2	39434.3	38912.1	137	0	0	137	0.2572
ENG TGPLong	30329.5	0.0	30329.5	43512.1	13182.6	0	0	0	0	0.0000
ENG TGPNBD	5723.9	35.5	5688.4	5700.8	12.4	489	1337	0	1825	0.3189
ENG TGPShort	14024.1	119.2	13904.9	51338.0	37433.1	1580	13438	0	15018	1.0709
TrCanCharges	4649.3	53.5	4595.8	7389.8	2794.0	0	3488	0	3488	0.7502
IroqCharges	4595.8	28.5	4567.3	7304.0	2736.7	408	3199	0	3607	0.7848
ENG PNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	1207.2	0.0	1207.2	43298.1	42090.9	0	0	0	0	0.0000
ENGPropane	788.3	0.0	788.3	31710.0	30921.7	0	0	0	0	0.0000
ENG C3Truck	788.3	0.0	788.3	21912.0	21123.7	788	0	0	788	1.0000
Dracut 30	16174.8	34.0	16140.9	54780.0	38639.1	702	21942	0	22644	1.3999
UnionCharges	4702.8	53.6	4649.3	7389.8	2740.6	0	700	0	700	0.1489
Dracut 20	4553.8	9.6	4544.2	36520.0	31975.8	198	5668	0	5866	1.2882

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	11357.8	316.6	11041.2	45650.0	34608.8	3380	0	0	3380	0.2976
Z4toTGPLH	19453.6	165.4	19288.3	38346.0	19057.7	2191	0	0	2191	0.1126
Z4toStg	13709.4	45.2	13664.1	39434.3	25770.2	679	0	0	679	0.0495
Engie2CG	2048.4	5.7	2042.6	5292.0	3249.4	68	0	0	68	0.0334
██████████	3190.3	6.7	3183.6	29068.5	25884.9	138	0	0	138	0.0434
██████████	3289.0	98.7	3190.3	29129.7	25939.3	0	0	0	0	0.0000
Repsol2Drac	21.9	0.7	21.3	79.5	58.3	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	14608.0	14608.0	0	0	0	0	0.0000
Engie2ENGLNG	1101.6	0.0	1101.6	5292.0	4190.4	1102	0	0	1102	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		987.8				11861	76547		88408	0.5720

RESOURCE MIX RESULTS

=====

	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	0.00
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	16.55
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments	██████████	NOV 2017	OCT 2022	0.00	150.00	15.92
	██████████	NOV 2017	OCT 2022	0.00	150.00	15.95
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	0.00
	██████████	NOV 2017	OCT 2022	0.00	150.00	0.00

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1496.6	2416.9	2893.8	2590.6	2103.6	1206.4	701.2	420.1	318.0	316.4	400.6	769.9	15634.1
Total Demand	1496.6	2416.9	2893.8	2590.6	2103.6	1206.4	701.2	420.1	318.0	316.4	400.6	769.9	15634.1
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.3	30.5	33.5	31.0	25.2	12.1	7.5	4.8	4.2	4.2	4.7	8.5	190.4
Injection	3.4	0.0	0.0	0.0	0.0	0.8	2.3	4.1	5.0	5.1	4.4	1.8	26.8
Withdrawal	0.4	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Total Fuel	28.0	31.7	35.0	32.4	26.4	12.9	9.8	8.9	9.2	9.3	9.1	10.3	222.9
Storage Injections													
ENGLNG	2.9	35.8	68.8	67.0	45.4	0.0	7.1	2.9	0.0	0.0	8.7	2.3	240.9
ENGPropane	0.0	0.0	59.6	21.2	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	149.9
ENGFSMA	257.0	0.0	0.0	0.0	0.0	0.0	147.9	281.2	316.3	319.0	302.4	131.1	1755.0
ENGDominion	9.2	0.0	0.0	0.0	0.0	8.1	0.9	4.4	24.4	28.2	23.3	8.1	106.7
ENGNGF	48.8	0.0	0.0	0.0	0.0	77.8	85.7	124.3	137.5	135.4	79.8	30.3	719.6
ENGHON	26.9	0.0	0.0	0.0	0.0	28.0	5.6	21.0	41.1	41.3	39.8	33.3	236.9
Total Inj	344.8	35.8	128.4	88.2	45.4	113.8	258.6	445.3	530.8	535.5	465.5	216.7	3208.9
Total Req	1869.4	2484.4	3057.3	2711.1	2175.4	1333.1	969.6	874.3	858.1	861.1	875.2	996.9	19065.9
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	397.0	88.1	20.6	0.0	0.0	0.0	0.0	24.4	2377.8
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	59.6	21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.8
ENG-Z4	249.0	257.3	257.3	232.4	257.3	739.9	787.6	759.3	742.9	745.9	753.8	787.6	6570.3
Dracut 20	11.9	6.8	70.9	37.1	66.7	17.1	0.0	0.0	0.0	0.0	0.0	0.0	210.6
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAWN	110.5	126.9	126.9	114.6	114.0	91.3	28.7	0.0	0.0	0.0	0.0	51.3	764.2
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	165.5	215.2	212.3	69.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	662.2
Dracut 30	515.6	604.1	657.1	650.5	513.3	292.8	8.9	0.0	0.0	0.0	0.0	13.2	3255.4
Engie Combo	2.9	149.4	185.4	188.2	104.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1602.7	1844.8	2108.3	1939.7	1628.6	1330.2	966.7	871.4	855.1	858.2	872.4	993.9	15872.0

144

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	124.4	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.9
ENGFSMA	179.0	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1739.4
ENGDominion	9.2	22.4	29.0	25.3	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.7
ENGNGF	48.8	158.6	189.0	170.7	152.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	719.6
ENGHON	26.9	54.0	60.7	54.0	41.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	236.9
Total With	266.8	639.7	948.9	771.4	546.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3193.9
Total Supply	1869.4	2484.4	3057.3	2711.1	2175.4	1333.1	969.6	874.3	858.1	861.1	875.2	996.9	19065.9
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	12	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1192	726	297	0	0	148	429	745	1064	1367	1482
ENGDominion	103	103	80	51	26	5	13	14	19	43	71	95	103
ENGNGF	671	671	512	323	152	0	78	163	288	425	561	640	671
ENGHON	246	246	192	132	78	36	64	70	91	132	173	213	246
Total Inv	2592	2670	2066	1246	562	61	172	428	870	1398	1930	2393	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Forecast Demand													
ENGIDesign	1535.4	2483.9	2966.0	2660.6	2159.4	1233.8	720.1	435.2	331.9	333.2	421.2	794.7	16075.2
Total Demand	1535.4	2483.9	2966.0	2660.6	2159.4	1233.8	720.1	435.2	331.9	333.2	421.2	794.7	16075.2
=====													
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
=====													
Fuel Consumed													
Transport	24.8	30.6	33.7	31.0	25.9	12.3	7.7	4.9	4.3	4.3	5.8	8.9	194.3
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.1	4.1	4.9	5.0	4.6	1.8	26.8
Withdrawal	0.4	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.5	31.8	35.2	32.4	27.2	13.2	9.8	8.9	9.3	9.4	10.4	10.7	226.7
=====													
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.4	0.0	7.1	2.9	0.0	0.0	8.7	2.3	241.5
ENGPropane	0.0	0.0	58.2	28.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	155.9
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	115.9	287.3	312.4	319.0	306.6	156.7	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	11.0	1.1	4.2	23.1	27.6	26.8	3.1	107.0
ENGNGF	44.4	0.0	0.0	0.0	0.0	86.6	102.8	108.1	137.5	131.1	96.4	8.2	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	33.7	8.0	17.1	41.3	41.3	40.0	26.3	234.5
Total Inj	343.4	35.8	126.9	95.6	45.4	131.2	246.5	431.1	525.8	530.6	490.1	208.1	3210.6
=====													
Total Req	1907.3	2551.5	3128.1	2788.6	2232.0	1378.3	976.3	875.2	866.9	873.2	921.8	1013.4	19512.6
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	407.3	89.4	23.9	0.0	0.0	0.0	0.0	31.3	2399.6
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	58.2	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.8
ENG-Z4	249.0	257.3	257.3	232.4	257.3	758.9	787.6	760.2	751.7	758.0	757.4	787.6	6614.7
Dracut 20	10.7	16.3	91.5	67.7	80.3	22.0	0.0	0.0	0.0	0.0	0.0	0.0	288.5
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	124.7	94.9	29.1	0.0	0.0	0.0	43.0	56.3	839.2
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	165.5	215.2	208.8	72.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	662.2
Dracut 30	528.2	665.8	704.2	693.1	530.3	309.2	11.8	0.0	0.0	0.0	0.0	17.8	3460.3
Engie Combo	3.5	149.4	185.4	186.6	105.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1626.9	1915.9	2174.5	2015.3	1684.5	1375.4	973.4	872.4	864.0	870.3	918.9	1010.5	16302.0

146

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	127.2	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	155.9
ENGFSMA	196.1	368.9	467.8	427.1	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	25.3	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.0
ENGNGF	44.4	158.4	189.0	170.7	152.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	50.1	60.7	54.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	635.5	953.6	773.3	547.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3210.6
Total Supply	1907.3	2551.5	3128.1	2788.6	2232.0	1378.3	976.3	875.2	866.9	873.2	921.8	1013.4	19512.6
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	724	297	0	0	116	403	716	1035	1341	1498
ENGDominion	103	103	80	51	26	6	17	18	22	45	73	100	103
ENGNGF	671	671	512	323	153	0	87	189	298	435	566	663	671
ENGHON	246	246	196	135	81	39	72	80	97	139	180	220	246
Total Inv	2607	2670	2070	1244	566	64	192	436	864	1387	1914	2402	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Forecast Demand													
ENGIDesign	1580.0	2537.4	3029.1	2778.4	2204.3	1268.0	742.9	453.0	347.5	353.3	444.1	837.5	16575.5
Total Demand	1580.0	2537.4	3029.1	2778.4	2204.3	1268.0	742.9	453.0	347.5	353.3	444.1	837.5	16575.5
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.9	30.6	33.7	31.9	25.8	12.6	10.1	5.2	4.9	4.5	4.9	8.4	197.6
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.7	3.8	5.1	5.0	4.2	1.8	26.8
Withdrawal	0.4	1.2	1.5	1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.6	31.8	35.2	33.3	27.1	13.4	12.8	9.0	10.0	9.5	9.1	10.2	230.1
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.1	45.4	0.0	7.1	2.9	2.9	0.0	5.8	2.3	241.6
ENGPropane	0.0	0.0	60.6	31.1	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	176.2	263.2	319.0	319.0	280.5	140.0	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	5.6	2.3	2.0	28.3	28.3	25.0	5.9	107.6
ENGNGF	44.4	0.0	0.0	0.0	0.0	93.8	95.2	108.5	137.5	128.0	82.9	24.9	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	30.7	32.0	37.1	41.3	36.6	19.8	10.2	234.5
Total Inj	343.4	35.8	129.4	98.2	45.4	130.0	324.3	425.2	540.7	523.5	425.4	194.8	3216.2
Total Req	1952.0	2605.0	3193.7	2909.9	2276.8	1411.5	1080.1	887.2	898.2	886.3	878.6	1042.5	20021.9
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	398.7	394.1	91.4	26.9	0.0	0.0	0.0	0.0	0.0	2373.9
ENGNiagara	94.2	97.4	97.4	91.1	97.4	91.4	97.4	93.1	97.4	97.4	92.2	97.4	1143.8
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	60.6	31.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.2	787.6	762.2	759.9	771.1	762.2	787.6	6654.4
Dracut 20	15.2	23.5	126.5	87.0	90.7	30.9	0.0	0.0	0.0	0.0	0.0	0.0	373.9
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	0.0	5.8	2.3	21.0
ENG Dawn	122.8	126.9	126.9	118.7	126.1	99.1	125.4	11.1	20.2	0.0	0.0	64.2	941.4
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	165.5	215.2	205.5	75.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	662.2
Dracut 30	568.3	724.4	749.4	733.8	570.6	326.8	16.2	0.0	0.0	0.0	0.0	70.3	3759.9
Engie Combo	3.5	145.8	185.4	188.1	107.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1671.6	1978.2	2257.2	2105.6	1728.9	1408.6	1077.1	884.3	895.3	883.4	875.8	1039.6	16805.6

148

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.1	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.6
ENGPropane	0.0	0.0	129.7	31.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	448.3	446.6	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	26.1	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.6
ENGNGF	44.4	151.6	189.0	176.8	153.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	56.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	626.8	936.5	804.3	547.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3216.2
Total Supply	1952.0	2605.0	3193.7	2909.9	2276.8	1411.5	1080.1	887.2	898.2	886.3	878.6	1042.5	20021.9
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	10	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	743	297	0	0	176	439	758	1077	1358	1498
ENGDominion	103	103	80	51	25	5	11	13	15	43	72	97	103
ENGNGF	671	671	519	330	153	0	94	189	298	435	563	646	671
ENGHON	246	246	198	137	81	39	69	101	138	180	216	236	246
Total Inv	2607	2670	2079	1272	566	63	190	512	934	1472	1992	2415	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1632.3	2610.2	3103.5	2781.5	2258.0	1304.5	766.1	469.6	362.1	370.2	467.6	875.1	17000.6
Total Demand	1632.3	2610.2	3103.5	2781.5	2258.0	1304.5	766.1	469.6	362.1	370.2	467.6	875.1	17000.6
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	25.0	30.8	34.0	31.1	26.1	12.9	10.3	7.1	5.2	4.6	5.1	8.7	200.9
Injection	3.4	0.0	0.0	0.0	0.0	1.0	2.9	4.5	5.1	4.8	3.7	1.4	26.8
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.7	32.1	35.5	32.4	27.3	13.9	13.2	11.7	10.3	9.4	8.7	10.2	233.3
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.4	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.5
ENGPropane	0.0	0.0	60.1	31.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	187.4	297.9	319.0	317.8	290.7	85.2	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	12.8	12.8	14.7	28.3	18.1	5.9	3.7	106.4
ENGNGF	44.4	0.0	0.0	0.0	0.0	93.5	79.8	127.6	137.5	124.3	52.1	56.0	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	22.7	10.2	27.3	41.3	41.3	37.4	26.3	233.3
Total Inj	343.4	35.8	128.8	98.7	45.4	128.9	308.8	481.8	540.7	516.0	400.4	184.9	3213.8
Total Req	2004.4	2678.0	3267.8	2912.6	2330.8	1447.3	1088.1	963.0	913.1	895.6	876.8	1070.2	20447.7
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	395.6	94.1	28.9	0.0	0.0	0.0	0.0	0.0	2366.2
ENGNiagara	94.2	97.4	97.4	88.0	97.4	92.0	97.4	93.6	97.4	97.4	93.2	97.4	1142.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	60.1	31.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	765.7	777.4	762.2	787.6	6658.3
Dracut 20	45.3	37.7	155.5	121.2	104.1	42.6	0.0	0.0	0.0	0.0	0.0	0.0	506.5
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	126.9	103.4	125.8	86.5	29.3	0.0	0.1	72.1	1035.4
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	165.5	215.2	203.1	78.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	662.2
Dracut 30	590.7	774.3	779.2	765.2	602.2	343.3	21.9	0.0	0.0	0.0	0.0	90.1	3966.9
Engie Combo	3.5	149.4	185.4	181.9	109.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1724.1	2045.8	2315.4	2133.5	1781.3	1444.4	1085.1	960.2	910.2	892.7	873.9	1067.2	17233.9

150

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	126.8	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	467.8	427.1	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.2	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.4
ENGNGF	44.4	156.9	189.0	170.7	154.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.4	632.1	952.3	779.1	549.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3213.8
Total Supply	2004.4	2678.0	3267.8	2912.6	2330.8	1447.3	1088.1	963.0	913.1	895.6	876.8	1070.2	20447.7
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	10	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	724	297	0	0	187	485	804	1122	1413	1498
ENGDominion	103	103	80	52	27	6	19	32	47	75	93	99	103
ENGNGF	671	671	514	325	154	0	93	173	301	438	563	615	671
ENGHON	246	246	198	137	83	40	62	73	100	141	183	220	246
Total Inv	2607	2670	2074	1250	570	66	192	498	977	1514	2027	2425	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1685.7	2685.5	3189.7	2858.2	2320.6	1343.4	790.2	486.6	376.1	387.3	489.9	914.4	17527.6
Total Demand	1685.7	2685.5	3189.7	2858.2	2320.6	1343.4	790.2	486.6	376.1	387.3	489.9	914.4	17527.6
=====													
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
=====													
Fuel Consumed													
Transport	25.1	31.0	34.0	31.2	26.4	13.1	10.5	7.6	5.5	5.7	5.4	9.0	204.6
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.8	4.5	5.1	5.1	3.4	1.4	26.6
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.8	32.2	35.5	32.6	27.6	14.1	13.2	12.1	10.6	10.8	8.8	10.4	236.9
=====													
Storage Injections													
ENGLNG	3.5	35.8	68.5	67.0	45.4	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.2
ENGPropane	0.0	0.0	57.1	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	238.0	308.8	319.0	319.0	216.5	81.1	1740.9
ENGDominion	10.1	0.0	0.0	0.0	0.0	5.5	1.0	17.4	28.1	28.3	10.1	5.8	106.3
ENGNGF	44.4	0.0	0.0	0.0	0.0	102.8	22.1	105.2	137.5	137.5	112.0	53.6	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	20.0	13.4	34.9	41.3	41.3	34.2	21.3	233.3
Total Inj	343.4	35.8	125.6	101.6	45.4	128.3	293.0	480.7	540.5	540.7	387.2	175.6	3197.8
=====													
Total Req	2057.8	2753.5	3350.9	2992.4	2393.6	1485.8	1096.5	979.4	927.3	938.8	885.9	1100.4	20962.3
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	398.3	96.5	30.9	0.0	0.0	0.0	0.0	0.0	2373.4
ENGNiagara	94.2	97.4	97.4	88.0	97.4	92.6	97.4	94.0	97.4	97.4	93.7	97.4	1144.1
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	57.1	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	769.9	780.2	762.2	787.6	6665.3
Dracut 20	37.3	65.2	231.6	158.6	121.0	56.3	0.0	0.0	0.0	0.0	0.0	0.0	669.9
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	126.9	108.2	126.3	102.5	39.2	40.4	8.8	79.2	1122.6
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	165.5	215.2	199.2	82.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	662.2
Dracut 30	652.2	823.7	806.1	792.7	639.5	360.4	27.7	0.0	0.0	0.0	0.0	113.3	4215.6
Engie Combo	3.5	149.0	185.4	181.1	111.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1777.5	2122.3	2415.6	2196.6	1843.2	1482.9	1093.5	976.6	924.3	935.8	883.1	1097.5	17748.9

152

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.6	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.2
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	451.6	443.4	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.2	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.3
ENGNGF	44.4	156.0	189.0	170.7	155.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.3	631.2	935.3	795.8	550.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3213.4
Total Supply	2057.8	2753.5	3350.9	2992.4	2393.6	1485.8	1096.5	979.4	927.3	938.8	885.9	1100.4	20962.3
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	740	297	0	0	238	547	866	1185	1401	1498
ENGDominion	103	103	80	52	27	6	12	13	30	58	87	97	103
ENGNGF	671	671	515	326	155	0	103	125	230	368	505	617	671
ENGHON	246	246	198	137	83	40	60	73	108	149	191	225	246
Total Inv	2607	2670	2075	1265	571	66	191	481	959	1496	2034	2419	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx Page 11
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	15634.1	16075.2	16575.5	17000.6	17527.6	82813.0
Total Demand	15634.1	16075.2	16575.5	17000.6	17527.6	82813.0
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	190.4	194.3	197.6	200.9	204.6	987.8
Injection	26.8	26.8	26.8	26.8	26.6	133.9
Withdrawal	5.7	5.6	5.6	5.6	5.6	28.3
Total Fuel	222.9	226.7	230.1	233.3	236.9	1150.0
Storage Injections						
ENGLNG	240.9	241.5	241.6	241.5	241.2	1206.6
ENGPropane	149.9	155.9	160.8	160.8	160.8	788.3
ENGFSMA	1755.0	1756.5	1756.5	1756.5	1740.9	8765.5
ENGDominion	106.7	107.0	107.6	106.4	106.3	534.0
ENGNGF	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total Inj	3208.9	3210.6	3216.2	3213.8	3197.8	16047.3
Total Req	19065.9	19512.6	20021.9	20447.7	20962.3	100010.3
=====						
Sources of Supply						
ENGUSGC	2377.8	2399.6	2373.9	2366.2	2373.4	11890.9
ENGNiagara	1146.6	1146.6	1143.8	1142.6	1144.1	5723.9
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	80.8	86.8	91.7	91.7	91.7	442.8
ENG-Z4	6570.3	6614.7	6654.4	6658.3	6665.3	33163.0
Dracut 20	210.6	288.5	373.9	506.5	669.9	2049.3
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAWN	764.2	839.2	941.4	1035.4	1122.6	4702.8
DAWN	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	662.2	662.2	662.2	662.2	662.2	3310.9
Dracut 30	3255.4	3460.3	3759.9	3966.9	4215.6	18658.0
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	15872.0	16302.0	16805.6	17233.9	17748.9	83962.4

151

APPENDIX 6.A.2 BASE CASE NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1333 V9 Normal Demand-8-18-17 Pricing-RMix ERD to 21-22
BASE CASE - Draw 0

Ventyx Page 12
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 09:24:14

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	241.5	241.5	241.6	241.5	241.2	1207.2
ENGPropane	149.9	155.9	160.8	160.8	160.8	788.3
ENGFSMA	1739.4	1756.5	1756.5	1756.5	1756.5	8765.5
ENGDominion	106.7	107.0	107.6	106.4	106.3	534.0
ENGNGF	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total With	3193.9	3210.6	3216.2	3213.8	3213.4	16047.9
=====						
Total Supply	19065.9	19512.6	20021.9	20447.7	20962.3	100010.3
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	12	12	12	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGF	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2607	2607	2607	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	59110	Injection Cost	47	Transportation Cost	2305	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	156.82
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	156.82
Total Variable	59137	Total Variable	92	Total Variable	2305		
Demand/Reservation Co	9593	Demand Cost	695	Demand Cost	19202		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	9688	Total Fixed	1669	Total Fixed	19202		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68825	Net Storage Cost	1761	Net Trans Cost	21506	Total Gas Cost	92092
						Total Revenue	0
						Net Cost	92092

Avg Cost of Served Demand 5.449 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.008 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	16901.8	0.0	16901.8	0.0	16901.8	16901.8	0.0	0	156.8	0.0	
Total	16901.8	0.0	16901.8	0.0	16901.8	16901.8	0.0	0	156.8	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2348.2	18250.0	15901.8			3.0144	7078	0	7078	3.0144
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	62.6	91.7	29.2			15.0000	939	0	939	15.0000
ENG-Z4	6558.5	6690.4	131.9			2.3200	15216	0	15216	2.3200
Dracut 20	795.1	7300.0	6504.9			5.1451	4091	0	4091	5.1451
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	738.4	2190.0	1451.6			3.1931	2358	0	2358	3.1931

APPENDIX 6.B.1 BASE CASE DESIGN YEAR RESOURCE MIX

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 16-Sep-2017
Report 1 (Continued) 13:11:02

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1164.9	2199.7	1034.8			3.1643	3686	0	3686	3.1643
Repsol 40	520.1	520.1	0.0							
Dracut 30	3033.5	10950.0	7916.5			5.9320	17995	0	17995	5.9320
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17172.0						59137	9688	68825	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	207.5	208.1	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	131.7	131.7	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1757.9	1723.5	0	18.8	1498	96	0.0	16	2573	3510	938
ENGDomion	103	100	110.5	108.3	0	2.2	103	100	0.0	0	178	246	67
ENGNGFG	671	100	705.9	700.3	0	5.6	671	100	5.5	0	1164	1593	429
ENGHON	246	100	243.8	243.8	0	0.0	246	100	0.0	0	427	555	128
Total	2592	97	3157.1	3115.6	0	26.5	2607	98	5.5	15	5426	6940	1514

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2348.2	0.0	2348.2	7882.5	5534.4	0	5043	0	5043	2.1478
ENG TGP2Stg	74.6	1.5	73.1	7882.5	7809.4	19	0	0	19	0.2572
ENG TGPLong	5982.4	0.0	5982.4	8698.1	2715.7	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2770.3	23.5	2746.8	10262.0	7515.2	312	2688	0	3000	1.0828
TrCanCharges	730.0	8.4	721.6	1477.2	755.6	0	698	0	698	0.9557
IroqCharges	721.6	4.5	717.1	1460.0	742.9	64	640	0	704	0.9754
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	208.1	0.0	208.1	8654.9	8446.8	0	0	0	0	0.0000
ENGPropane	131.7	0.0	131.7	6335.0	6203.3	0	0	0	0	0.0000
ENG C3Truck	131.7	0.0	131.7	4380.0	4248.3	132	0	0	132	1.0000
Dracut 30	2715.4	5.7	2709.7	10950.0	8240.3	118	4388	0	4506	1.6595
UnionCharges	738.4	8.4	730.0	1477.2	747.2	0	140	0	140	0.1896
Dracut 20	1118.2	2.3	1115.8	7300.0	6184.2	49	1134	0	1182	1.0573

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2273.5	63.4	2210.2	9125.0	6914.8	677	0	0	677	0.2976
Z4toTGPH	3804.6	32.3	3772.2	7665.0	3892.8	429	0	0	429	0.1126
Z4toStg	2754.0	9.1	2744.9	7882.5	5137.7	136	0	0	136	0.0495
Engie2CG	443.5	1.2	442.3	1057.0	614.7	15	0	0	15	0.0334
██████████	1628.7	3.4	1625.3	6683.6	5058.3	71	0	0	71	0.0434
██████████	515.0	15.5	499.6	4565.5	4065.9	0	0	0	0	0.0000
Repsol2Drac	5.1	0.2	4.9	15.9	10.9	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	186.5	0.0	186.5	1057.0	870.5	186	0	0	186	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1164.9	18.5	1146.3	2164.7	1018.3	0	2186	0	2186	1.8769
██████████	1146.3	17.2	1129.1	2132.2	1003.1	0	████████████████████	████████████████████	████████████████████	████████████████████
Total		223.1				2305	████████████████████	████████████████████	████████████████████	████████████████████

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	59034	Injection Cost	47	Transportation Cost	2345	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	160.99
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	160.99
Total Variable	59061	Total Variable	92	Total Variable	2345		
Demand/Reservation Co	9593	Demand Cost	695	Demand Cost	19202		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	9688	Total Fixed	1669	Total Fixed	19202		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68749	Net Storage Cost	1761	Net Trans Cost	21547	Total Gas Cost	92056
						Total Revenue	0
						Net Cost	92056

Avg Cost of Served Demand 5.298 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.898 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17376.0	0.0	17376.0	0.0	17376.0	17376.0	0.0	0	161.0	0.0	
Total	17376.0	0.0	17376.0	0.0	17376.0	17376.0	0.0	0	161.0	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2373.3	18250.0	15876.7			2.9071	6899	0	6899	2.9071
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	68.6	91.7	23.2			15.0000	1028	0	1028	15.0000
ENG-Z4	6617.6	6690.4	72.8			2.1145	13993	0	13993	2.1145
Dracut 20	883.3	7300.0	6416.7			5.3471	4723	0	4723	5.3471
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	758.8	2190.0	1431.2			2.9538	2241	0	2241	2.9538

151

APPENDIX 6.B.1 BASE CASE DESIGN YEAR RESOURCE MIX

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 16-Sep-2017
Report 1 (Continued) 13:11:02

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1217.2	2199.7	982.5			2.9204	3555	0	3555	2.9204
Repsol 40	520.1	520.1	0.0							
Dracut 30	3245.9	10950.0	7704.1			5.9351	19264	0	19264	5.9351
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	17635.4						59061	9688	68749	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	209.4	209.4	0	0.0	12	95	0.0	0	57	55	-2
ENGPropane	77	100	137.7	137.7	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1755.7	1736.9	0	18.8	1498	96	0.0	0	3510	3141	-370
ENGDominion	103	100	109.5	107.4	0	2.1	103	100	0.0	0	246	221	-24
ENGNGF	671	100	703.0	697.4	0	5.6	671	100	5.5	0	1593	1431	-162
ENGHON	246	100	246.0	246.0	0	0.0	246	100	0.0	0	555	518	-37
Total	2607	98	3161.3	3134.8	0	26.5	2607	98	5.5	0	6940	6344	-596

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	2373.3	0.0	2373.3	7882.5	5509.3	0	5043	0	5043	2.1250
ENGTP2Stg	71.0	1.5	69.5	7882.5	7813.0	18	0	0	18	0.2572
ENGTPLong	6069.1	0.0	6069.1	8698.1	2629.0	0	0	0	0	0.0000
ENGTPBND	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENGTPShort	2782.2	23.6	2758.6	10262.0	7503.4	313	2688	0	3001	1.0786
TrCanCharges	750.1	8.6	741.5	1477.2	735.7	0	698	0	698	0.9300
IroqCharges	741.5	4.6	736.9	1460.0	723.1	66	640	0	706	0.9515
ENGPNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	209.4	0.0	209.4	8654.9	8445.5	0	0	0	0	0.0000
ENGPropane	137.7	0.0	137.7	6335.0	6197.3	0	0	0	0	0.0000
ENG3Truck	137.7	0.0	137.7	4380.0	4242.3	138	0	0	138	1.0000
Dracut 30	2918.7	6.1	2912.6	10950.0	8037.4	127	4388	0	4515	1.5469
UnionCharges	758.8	8.6	750.1	1477.2	727.0	0	140	0	140	0.1845
Dracut 20	1215.1	2.6	1212.6	7300.0	6087.4	53	1134	0	1186	0.9764

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2302.3	64.2	2238.1	9125.0	6886.9	685	0	0	685	0.2976
Z4toTGPLH	3863.8	32.8	3831.0	7665.0	3834.0	435	0	0	435	0.1126
Z4toStg	2753.8	9.1	2744.7	7882.5	5137.9	136	0	0	136	0.0495
Engie2CG	441.6	1.2	440.4	1057.0	616.6	15	0	0	15	0.0334
██████████	1679.7	3.5	1676.2	6683.6	5007.4	73	0	0	73	0.0434
Repsol2Drac	515.4	15.5	499.9	4565.5	4065.6	0	0	0	0	0.0000
██████████	4.8	0.1	4.6	15.9	11.3	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	188.4	0.0	188.4	1057.0	868.6	188	0	0	188	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1217.2	19.4	1197.8	2164.7	966.9	0	2186	0	2186	1.7963
██████████	1197.8	18.0	1179.8	2132.2	952.4	0	████████████████████	████████████████████	████████████████████	████████████████████
Total		227.4				2345	████████████████████	████████████████████	████████████████████	████████████████████

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	60152	Injection Cost	47	Transportation Cost	2388	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	164.64
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	164.64
Total Variable	60179	Total Variable	92	Total Variable	2388		
Demand/Reservation Co	9593	Demand Cost	695	Demand Cost	19202		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	9688	Total Fixed	1669	Total Fixed	19202		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	69867	Net Storage Cost	1761	Net Trans Cost	21590	Total Gas Cost	93218
						Total Revenue	0
						Net Cost	93218

Avg Cost of Served Demand 5.195 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.837 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17944.8	0.0	17944.8	0.0	17944.8	17944.8	0.0	0	164.6	0.0	
Total	17944.8	0.0	17944.8	0.0	17944.8	17944.8	0.0	0	164.6	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2358.7	18300.0	15941.3			2.7936	6589	0	6589	2.7936
ENGNiagara	1145.4	1170.5	25.0			2.1355	2446	0	2446	2.1355
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	79.5	91.7	12.3			15.0000	1192	0	1192	15.0000
ENG-Z4	6655.4	6698.7	43.3			1.9745	13141	0	13141	1.9745
Dracut 20	1070.5	7320.0	6249.5			5.3281	5704	0	5704	5.3281
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	772.8	2196.0	1423.2			2.8520	2204	0	2204	2.8520

102

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1320.0	2205.7	885.6			2.8103	3710	0	3710	2.8103
Repsol 40	520.1	520.1	0.0							
Dracut 30	3482.0	10980.0	7498.0			5.8894	20507	0	20507	5.8894
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	18208.8						60179	9688	69867	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	217.4	217.4	0	0.0	12	95	0.0	0	55	54	-0
ENGPropane	77	100	148.6	148.6	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1757.6	1738.8	0	18.8	1498	96	0.0	0	3141	2991	-150
ENGDominion	103	100	110.6	108.4	0	2.2	103	100	0.0	0	221	210	-11
ENGNGFG	671	100	708.3	702.7	0	5.6	671	100	5.6	0	1431	1363	-68
ENGHON	246	100	247.4	247.4	0	0.0	246	100	0.0	0	518	490	-28
Total	2607	98	3189.9	3163.3	0	26.6	2607	98	5.6	0	6344	6088	-256

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2358.7	0.0	2358.7	7904.1	5545.4	0	5043	0	5043	2.1381
ENG TGP2Stg	80.0	1.6	78.3	7904.1	7825.8	21	0	0	21	0.2572
ENG TGPLong	6082.8	0.0	6082.8	8719.7	2636.9	0	0	0	0	0.0000
ENG TGPNBD	1145.4	7.1	1138.3	1142.7	4.3	98	267	0	365	0.3187
ENG TGPShort	2791.8	23.7	2768.1	10290.1	7522.0	314	2688	0	3002	1.0753
TrCanCharges	764.0	8.8	755.2	1481.2	726.0	0	698	0	698	0.9131
IroqCharges	755.2	4.7	750.5	1464.0	713.5	67	640	0	707	0.9359
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990
ENGLNG	217.4	0.0	217.4	8678.6	8461.2	0	0	0	0	0.0000
ENGPropane	148.6	0.0	148.6	6370.0	6221.4	0	0	0	0	0.0000
ENG C3Truck	148.6	0.0	148.6	4392.0	4243.4	149	0	0	149	1.0000
Dracut 30	3248.3	6.8	3241.5	10980.0	7738.5	141	4388	0	4529	1.3944
UnionCharges	772.8	8.8	764.0	1481.2	717.2	0	140	0	140	0.1812
Dracut 20	1308.8	2.7	1306.0	7320.0	6014.0	57	1134	0	1191	0.9096

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2278.7	63.5	2215.2	9150.0	6934.8	678	0	0	678	0.2976
Z4toTGPLH	3900.7	33.2	3867.6	7686.0	3818.4	439	0	0	439	0.1126
Z4toStg	2754.7	9.1	2745.6	7904.1	5158.6	136	0	0	136	0.0495
Engie2CG	433.6	1.2	432.4	1064.0	631.6	14	0	0	14	0.0334
██████████	1779.5	3.7	1775.7	6702.0	4926.2	77	0	0	77	0.0434
Repsol2Drac	515.4	15.5	499.9	4578.0	4078.1	0	0	0	0	0.0000
██████████	4.8	0.1	4.6	16.0	11.4	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
Engie2ENGLNG	196.4	0.0	196.4	2928.0	2928.0	0	0	0	0	0.0000
Dawn2Dracut	0.0	0.0	0.0	1064.0	867.6	196	0	0	196	1.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	1320.0	21.0	1299.0	2170.6	871.6	0	2186	0	2186	1.6563
██████████	1299.0	19.5	1279.6	2138.0	858.5	0	████████████████████	████████████████████	████████████████████	████████████████████
Total		231.9				2388	████████████████████	████████████████████	████████████████████	████████████████████

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	62690	Injection Cost	47	Transportation Cost	2423	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	168.93
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	168.93
Total Variable	62717	Total Variable	93	Total Variable	2423		
Demand/Reservation Co	9593	Demand Cost	695	Demand Cost	19202		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	9688	Total Fixed	1669	Total Fixed	19202		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	72405	Net Storage Cost	1762	Net Trans Cost	21624	Total Gas Cost	95791
						Total Revenue	0
						Net Cost	95791

Avg Cost of Served Demand 5.215 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.885 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	18367.2	0.0	18367.2	0.0	18367.2	18367.2	0.0	0	168.9	0.0
Total	18367.2	0.0	18367.2	0.0	18367.2	18367.2	0.0	0	168.9	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2355.2	18250.0	15894.8			2.8115	6622	0	6622	2.8115
ENGNiagara	1144.2	1167.3	23.0			2.1441	2453	0	2453	2.1441
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6658.9	6690.4	31.5			1.9829	13204	0	13204	1.9829
Dracut 20	1266.6	7300.0	6033.4			5.4680	6926	0	6926	5.4680
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	777.9	2190.0	1412.1			2.8501	2217	0	2217	2.8501

165

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1411.6	2199.7	788.1			2.7950	3945	0	3945	2.7950
Repsol 40	520.1	520.1	0.0							
Dracut 30	3605.5	10950.0	7344.5			5.9086	21303	0	21303	5.9086
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	18635.7						62717	9688	72405	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	221.9	221.2	0	0.0	13	100	0.0	1	54	57	3
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1757.0	1738.2	0	18.8	1498	96	0.0	0	2991	3019	28
ENGDomion	103	100	112.3	110.1	0	2.2	103	100	0.0	0	210	213	2
ENGNGF	671	100	716.2	710.5	0	5.7	671	100	5.6	0	1363	1372	9
ENGHON	246	100	245.9	245.9	0	0.0	246	100	0.0	0	490	490	0
Total	2607	98	3214.1	3186.8	0	26.6	2608	98	5.6	1	6088	6130	42

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	2355.2	0.0	2355.2	7882.5	5527.3	0	5043	0	5043	2.1413
ENGTP2Stg	89.3	1.8	87.5	7882.5	7795.1	23	0	0	23	0.2572
ENGTPLong	6075.4	0.0	6075.4	8698.1	2622.7	0	0	0	0	0.0000
ENGTPBND	1144.2	7.1	1137.1	1139.5	2.4	98	267	0	365	0.3190
ENGTPShort	2799.1	23.8	2775.3	10262.0	7486.6	315	2688	0	3003	1.0728
TrCanCharges	769.0	8.8	760.2	1477.2	717.0	0	698	0	698	0.9071
IroqCharges	760.2	4.7	755.4	1460.0	704.6	67	640	0	707	0.9303
ENGPNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	221.2	0.0	221.2	8654.9	8433.7	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3344.3	7.0	3337.2	10950.0	7612.8	145	4388	0	4533	1.3556
UnionCharges	777.9	8.9	769.0	1477.2	708.2	0	140	0	140	0.1800
Dracut 20	1532.4	3.2	1529.2	7300.0	5770.8	67	1134	0	1200	0.7832

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2265.9	63.2	2202.8	9125.0	6922.2	674	0	0	674	0.2976
Z4toTGPH	3905.8	33.2	3872.6	7665.0	3792.4	440	0	0	440	0.1126
Z4toStg	2753.0	9.1	2743.9	7882.5	5138.6	136	0	0	136	0.0495
Engie2CG	429.1	1.2	427.9	1057.0	629.1	14	0	0	14	0.0334
██████████	1868.2	3.9	1864.3	6683.6	4819.4	81	0	0	81	0.0434
Repsol2Drac	515.4	15.5	499.9	4565.5	4065.6	0	0	0	0	0.0000
██████████	4.8	0.1	4.6	15.9	11.3	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	200.9	0.0	200.9	1057.0	856.1	201	0	0	201	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1411.6	22.4	1389.1	2164.7	775.5	0	2186	0	2186	1.5489
██████████	1389.1	20.8	1368.3	2132.2	763.9	0	██████████	██████████	██████████	██████████
Total		235.7				2423	██████████	██████████	██████████	██████████

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	66913	Injection Cost	47	Transportation Cost	2454	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	173.92
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	173.92
Total Variable	66940	Total Variable	93	Total Variable	2454		
Demand/Reservation Co	9593	Demand Cost	695	Demand Cost	19202		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	9688	Total Fixed	1669	Total Fixed	19202		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	76628	Net Storage Cost	1762	Net Trans Cost	21655	Total Gas Cost	100045
						Total Revenue	0
						Net Cost	100045

Avg Cost of Served Demand 5.284 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.993 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	18933.7	0.0	18933.7	0.0	18933.7	18933.7	0.0	0	173.9	0.0	
Total	18933.7	0.0	18933.7	0.0	18933.7	18933.7	0.0	0	173.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2365.7	18250.0	15884.3			2.8368	6711	0	6711	2.8368
ENGNiagara	1145.8	1167.3	21.5			2.1910	2510	0	2510	2.1910
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6665.7	6690.4	24.7			2.0468	13643	0	13643	2.0468
Dracut 20	1467.7	7300.0	5832.3			5.8201	8542	0	8542	5.8201
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	788.8	2190.0	1401.2			2.8722	2266	0	2266	2.8722

100

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1495.3	2199.7	704.3			2.8083	4199	0	4199	2.8083
Repsol 40	520.1	520.1	0.0							
Dracut 30	3844.7	10950.0	7105.3			5.9837	23005	0	23005	5.9837
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	19189.6						66940	9688	76628	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	224.3	225.0	0	0.0	12	95	0.0	-1	57	55	-2
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1737.8	1734.8	0	18.6	1482	95	0.0	-16	3019	3086	67
ENGDomion	103	100	112.7	110.5	0	2.2	103	100	0.0	0	213	219	7
ENGNGF	671	100	715.3	709.6	0	5.7	671	100	5.6	0	1372	1418	45
ENGHON	246	100	247.8	247.8	0	0.0	246	100	0.0	0	490	505	15
Total	2608	98	3198.8	3188.6	0	26.4	2591	97	5.6	-16	6130	6262	132

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	2365.7	0.0	2365.7	7882.5	5516.8	0	5043	0	5043	2.1318
ENGTP2Stg	88.2	1.8	86.4	7882.5	7796.2	23	0	0	23	0.2572
ENGTPLong	6110.1	0.0	6110.1	8698.1	2588.0	0	0	0	0	0.0000
ENGTPBND	1145.8	7.1	1138.7	1139.5	0.9	98	267	0	365	0.3187
ENGTPShort	2797.2	23.8	2773.4	10262.0	7488.6	315	2688	0	3003	1.0735
TrCanCharges	779.9	9.0	770.9	1477.2	706.3	0	698	0	698	0.8945
IroqCharges	770.9	4.8	766.1	1460.0	693.9	68	640	0	708	0.9186
ENGPNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	225.0	0.0	225.0	8654.9	8429.9	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3604.9	7.6	3597.4	10950.0	7352.6	156	4388	0	4545	1.2607
UnionCharges	788.8	9.0	779.9	1477.2	697.3	0	140	0	140	0.1775
Dracut 20	1712.2	3.6	1708.6	7300.0	5591.4	74	1134	0	1208	0.7055

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2277.5	63.5	2214.0	9125.0	6911.0	678	0	0	678	0.2976
Z4toTGPLH	3929.4	33.4	3896.0	7665.0	3769.0	443	0	0	443	0.1126
Z4toStg	2736.3	9.0	2727.3	7882.5	5155.3	136	0	0	136	0.0495
Engie2CG	426.7	1.2	425.5	1057.0	631.5	14	0	0	14	0.0334
██████████	1949.2	4.1	1945.1	6683.6	4738.6	85	0	0	85	0.0434
Repsol2Drac	515.2	15.5	499.7	4565.5	4065.8	0	0	0	0	0.0000
██████████	5.0	0.1	4.8	15.9	11.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	203.3	0.0	203.3	1057.0	853.7	203	0	0	203	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1495.3	23.8	1471.5	2164.7	693.1	0	2186	0	2186	1.4621
██████████	1471.5	22.1	1449.5	2132.2	682.7	0	██████████	0	██████████	██████████
Total		240.1				2454	██████████		██████████	██████████

APPENDIX 6.B.1 BASE CASE DESIGN YEAR RESOURCE MIX

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1z 16-Sep-2017
Report 1z 13:11:02

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	307899	Injection Cost	236	Transportation Cost	11915	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	227	Other Variable Cost	0	System Served	173.92
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	173.92
Total Variable	308034	Total Variable	463	Total Variable	11915		
Demand/Reservation Co	47967	Demand Cost	3477	Demand Cost	96008		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	48439	Total Fixed	8343	Total Fixed	96008		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	356474	Net Storage Cost	8806	Net Trans Cost	107923	Total Gas Cost	473202
						Total Revenue	0
						Net Cost	473202

Avg Cost of Served Demand 5.286 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.924 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	89523.5	0.0	89523.5	0.0	89523.5	89523.5	0.0	0	173.9	0.0
Total	89523.5	0.0	89523.5	0.0	89523.5	89523.5	0.0	0	173.9	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11801.0	91300.0	79499.0			2.8726	33900	0	33900	2.8726
ENGNiagara	5728.7	5839.5	110.9			2.2007	12607	0	12607	2.2007
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	394.1	458.7	64.6			15.0000	5912	0	5912	15.0000
ENG-Z4	33156.1	33460.3	304.2			2.0870	69197	0	69197	2.0870
Dracut 20	5483.2	36520.0	31036.8			5.4686	29986	0	29986	5.4686
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DLiqSummer	105.0	105.0	0.0							
ENG Dawn	3836.6	10956.0	7119.4			2.9415	11286	0	11286	2.9415

171

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	6608.9	11004.3	4395.4			2.8893	19095	0	19095	2.8893
Repsol 40	2600.7	2600.7	0.0							
Dracut 30	17211.5	54780.0	37568.5			5.9306	102074	0	102074	5.9306
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	90841.6						308034	48439	356474	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1080.4	1081.0	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	739.6	739.6	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8766.0	8672.2	0	93.8	1482	95	0.0	0	2573	3086	513
ENGDomion	103	100	555.6	544.8	0	10.8	103	100	0.0	0	178	219	41
ENGNGF	671	100	3548.6	3520.6	0	28.0	671	100	27.8	0	1164	1418	253
ENGHON	246	100	1230.9	1230.9	0	0.0	246	100	0.0	0	427	505	78
Total	2592	97	15921.1	15789.1	0	132.7	2591	97	27.8	-1	5426	6262	836

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	11801.0	0.0	11801.0	39434.3	27633.3	0	25216	0	25216	2.1368
ENGTP2Stg	403.1	8.2	394.8	39434.3	39039.5	104	0	0	104	0.2572
ENGTPLong	30319.8	0.0	30319.8	43512.1	13192.3	0	0	0	0	0.0000
ENGTPBND	5728.7	35.5	5693.2	5700.8	7.6	489	1337	0	1826	0.3187
ENGTPShort	13940.7	118.5	13822.2	51338.0	37515.8	1570	13438	0	15009	1.0766
TrCanCharges	3792.9	43.6	3749.3	7389.8	3640.5	0	3488	0	3488	0.9196
IroqCharges	3749.3	23.2	3726.0	7304.0	3578.0	333	3199	0	3531	0.9419
ENGPNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	1081.0	0.0	1081.0	43298.1	42217.1	0	0	0	0	0.0000
ENGPropane	739.6	0.0	739.6	31710.0	30970.4	0	0	0	0	0.0000
ENG3Truck	739.6	0.0	739.6	21912.0	21172.4	740	0	0	740	1.0000
Dracut 30	15831.6	33.2	15798.4	54780.0	38981.6	687	21942	0	22629	1.4293
UnionCharges	3836.6	43.7	3792.9	7389.8	3596.9	0	700	0	700	0.1825
Dracut 20	6886.7	14.5	6872.3	36520.0	29647.7	299	5668	0	5967	0.8665

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	11398.0	317.7	11080.3	45650.0	34569.7	3392	0	0	3392	0.2976
Z4toTGPLH	19404.4	164.9	19239.5	38346.0	19106.5	2186	0	0	2186	0.1126
Z4toStg	13751.7	45.4	13706.3	39434.3	25728.0	681	0	0	681	0.0495
Engie2CG	2174.6	6.1	2168.5	5292.0	3123.5	73	0	0	73	0.0334
██████████	8905.3	18.7	8886.6	33436.5	24549.9	387	0	0	387	0.0434
██████████	2576.3	77.3	2499.0	22840.0	20341.0	0	0	0	0	0.0000
Repsol2Drac	24.4	0.7	23.7	79.5	55.9	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	14608.0	14608.0	0	0	0	0	0.0000
Engie2ENGLNG	975.4	0.0	975.4	5292.0	4316.6	975	0	0	975	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	6608.9	105.1	6503.8	10829.3	4325.5	0	10932	0	10932	1.6541
██████████	6503.8	97.6	6406.3	10666.9	4260.6	0	██████████	██████████	██████████	██████████
Total		1158.2				11915	██████████	██████████	██████████	██████████

RESOURCE MIX RESULTS

Units: MDT

=====

	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	6.03
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	13.00
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments	██████████	NOV 2017	OCT 2022	0.00	150.00	18.31
	██████████	NOV 2017	OCT 2022	0.00	150.00	12.51
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	5.93
	██████████	NOV 2017	OCT 2022	0.00	150.00	5.84

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1621.5	2706.4	3199.1	2760.8	2326.1	1339.6	703.0	420.9	318.9	317.2	401.5	786.7	16901.8
Total Demand	1621.5	2706.4	3199.1	2760.8	2326.1	1339.6	703.0	420.9	318.9	317.2	401.5	786.7	16901.8
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	30.1	34.4	40.2	36.5	29.3	16.5	7.9	4.8	4.2	4.2	4.7	10.4	223.1
Injection	3.0	0.0	0.0	0.0	0.0	0.7	2.4	4.0	5.0	5.1	4.3	2.1	26.5
Withdrawal	0.2	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Total Fuel	33.3	35.7	41.7	37.7	30.5	17.2	10.3	8.8	9.2	9.3	9.0	12.5	255.2
Storage Injections													
ENGLNG	2.9	32.4	49.7	67.0	34.4	0.0	7.1	2.9	0.0	0.0	8.7	2.3	207.5
ENGPropane	0.0	0.0	54.9	7.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	131.7
ENGFSMA	241.1	0.0	0.0	0.0	0.0	0.0	155.7	287.8	316.8	318.9	291.0	127.9	1739.1
ENGDominion	7.3	0.0	0.0	0.0	0.0	13.7	8.2	4.3	25.5	27.3	14.8	7.3	108.3
ENGNGF	29.5	0.0	0.0	0.0	0.0	49.4	67.8	103.6	135.7	137.5	103.2	73.6	700.3
ENGHON	30.1	0.0	0.0	0.0	0.0	32.0	6.7	34.7	41.1	40.1	35.7	23.4	243.8
Total Inj	311.0	32.4	104.6	74.7	34.4	95.1	256.9	444.6	530.6	535.3	465.0	246.0	3130.6
Total Req	1965.7	2774.6	3345.3	2873.3	2391.1	1451.9	970.2	874.4	858.7	861.9	875.4	1045.2	20287.6
=====													
Sources of Supply													
ENGUSGC	609.9	426.2	426.2	385.0	398.7	79.8	4.5	0.0	0.0	0.0	0.0	17.7	2348.2
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	54.9	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.6
ENG-Z4	249.0	257.3	257.3	232.4	257.3	726.4	787.6	759.4	743.5	746.6	754.0	787.6	6558.5
Dracut 20	81.3	261.5	231.5	38.9	163.5	18.5	0.0	0.0	0.0	0.0	0.0	0.0	795.1
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAWN	115.6	126.9	126.9	114.6	118.7	83.7	13.9	0.0	0.0	0.0	0.0	38.0	738.4
DAWN	176.8	186.8	186.8	168.7	174.8	150.8	39.2	0.0	0.0	0.0	0.0	81.0	1164.9
Repsol 40	0.0	78.2	221.0	211.6	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1
Dracut 30	394.9	504.5	648.7	650.2	545.0	288.6	1.1	0.0	0.0	0.0	0.0	0.6	3033.5
Engie Combo	2.9	163.1	175.6	190.8	97.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1732.8	2113.1	2438.4	2098.3	1872.1	1449.0	967.3	871.5	855.8	858.9	872.6	1042.2	17172.0

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 (Continued) 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	32.4	60.8	67.0	24.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	208.1
ENGPropane	0.0	0.0	100.8	30.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	131.7
ENGFSMA	163.1	372.9	466.7	439.8	281.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1723.5
ENGDominion	7.3	27.3	29.0	24.9	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	108.3
ENGNGF	29.5	170.3	189.0	159.0	152.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	700.3
ENGHON	30.1	58.6	60.7	53.4	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	243.8
Total With	232.9	661.5	906.9	775.0	519.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3115.6
=====													
Total Supply	1965.7	2774.6	3345.3	2873.3	2391.1	1451.9	970.2	874.4	858.7	861.9	875.4	1045.2	20287.6
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	31	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1187	721	281	0	0	156	443	760	1079	1370	1482
ENGDominion	103	103	75	46	22	2	15	24	28	53	81	95	103
ENGNGF	671	671	500	311	152	0	49	117	221	356	494	597	671
ENGHON	246	246	188	127	74	33	65	71	106	147	187	223	246
Total Inv	2592	2670	2041	1239	538	54	146	400	842	1369	1902	2364	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Forecast Demand													
ENGIDesign	1663.5	2781.3	3279.0	2835.4	2387.7	1370.0	721.9	436.1	332.7	334.1	422.1	812.0	17376.0
Total Demand	1663.5	2781.3	3279.0	2835.4	2387.7	1370.0	721.9	436.1	332.7	334.1	422.1	812.0	17376.0
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	30.6	34.5	40.6	36.3	30.2	17.0	8.1	4.9	4.3	4.4	5.7	10.8	227.4
Injection	2.9	0.0	0.0	0.0	0.0	1.0	2.2	4.0	4.9	5.0	4.4	2.1	26.5
Withdrawal	0.2	1.4	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Total Fuel	33.7	35.9	42.1	37.5	31.4	17.9	10.4	8.9	9.2	9.3	10.1	12.9	259.4
Storage Injections													
ENGLNG	3.5	37.1	46.6	67.0	34.3	0.0	7.1	2.9	0.0	0.0	8.7	2.3	209.4
ENGPropane	0.0	0.0	34.3	34.3	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	137.7
ENGFSMA	238.9	0.0	0.0	0.0	0.0	0.0	142.5	277.7	314.9	317.6	289.4	155.8	1736.9
ENGDominion	6.4	0.0	0.0	0.0	0.0	17.4	4.6	9.9	21.1	23.6	21.5	3.0	107.4
ENGNGF	26.6	0.0	0.0	0.0	0.0	75.9	73.9	96.6	137.5	136.3	109.6	40.9	697.4
ENGHON	31.3	0.0	0.0	0.0	0.0	34.7	5.1	31.8	40.5	41.3	37.3	24.0	246.0
Total Inj	306.8	37.1	80.9	101.3	34.3	128.0	244.7	430.4	525.5	530.4	478.1	237.5	3134.8
Total Req	2004.0	2854.3	3402.0	2974.2	2453.4	1515.9	977.0	875.3	867.5	873.8	910.3	1062.5	20770.2
=====													
Sources of Supply													
ENGUSGC	612.3	426.2	426.2	385.0	412.5	82.6	5.6	0.0	0.0	0.0	0.0	22.8	2373.3
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	34.3	34.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.6
ENG-Z4	249.0	257.3	257.3	232.4	257.3	760.3	787.6	760.2	752.3	758.6	757.6	787.6	6617.6
Dracut 20	79.4	266.4	267.0	78.1	166.8	25.7	0.0	0.0	0.0	0.0	0.0	0.0	883.3
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	85.7	16.5	0.0	0.0	0.0	0.0	42.6	758.8
DAWN	180.8	186.8	186.8	168.7	180.8	155.1	41.3	0.0	0.0	0.0	31.3	85.5	1217.2
Repsol 40	0.0	69.7	229.4	204.1	17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1
Dracut 30	410.0	543.6	683.1	714.4	586.4	302.6	2.1	0.0	0.0	0.0	0.0	3.6	3245.9
Engie Combo	3.5	159.9	172.9	190.8	103.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1760.3	2145.3	2493.5	2220.7	1953.6	1513.1	974.1	872.4	864.6	870.9	907.4	1059.5	17635.4

177

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 (Continued) 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	37.1	57.7	67.0	24.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	209.4
ENGPropane	0.0	0.0	103.4	34.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.7
ENGFSMA	176.5	409.7	468.8	416.4	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1736.9
ENGDominion	6.4	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.4
ENGNGF	26.6	174.3	189.0	158.5	148.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	697.4
ENGHON	31.3	59.9	60.7	53.2	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	246.0
Total With	243.7	709.0	908.5	753.5	499.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3134.8
Total Supply	2004.0	2854.3	3402.0	2974.2	2453.4	1515.9	977.0	875.3	867.5	873.8	910.3	1062.5	20770.2
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1151	682	266	0	0	143	420	735	1053	1342	1498
ENGDominion	103	103	75	46	22	2	19	24	34	55	78	100	103
ENGNGF	671	671	496	307	149	0	76	150	246	384	520	630	671
ENGHON	246	246	186	126	73	32	66	71	103	144	185	222	246
Total Inv	2607	2670	1998	1170	518	53	178	420	847	1370	1897	2372	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Forecast Demand													
ENGIDesign	1711.8	2841.3	3349.1	2995.4	2437.4	1408.0	744.7	453.8	348.4	354.2	444.9	855.7	17944.8
Total Demand	1711.8	2841.3	3349.1	2995.4	2437.4	1408.0	744.7	453.8	348.4	354.2	444.9	855.7	17944.8
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	30.8	34.7	40.6	37.2	30.1	17.4	11.6	5.0	4.4	4.5	4.9	10.7	231.9
Injection	3.0	0.0	0.0	0.0	0.0	1.0	3.0	3.9	4.9	4.9	3.9	1.9	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	34.1	36.1	42.1	38.5	31.1	18.4	14.6	8.9	9.3	9.4	8.9	12.7	264.0
Storage Injections													
ENGLNG	3.5	44.2	46.6	67.0	35.1	0.0	7.1	2.9	2.9	0.0	5.8	2.3	217.4
ENGPropane	0.0	0.0	47.8	31.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	148.6
ENGFSMA	240.8	0.0	0.0	0.0	0.0	0.0	195.7	263.1	310.4	317.7	289.8	121.3	1738.8
ENGDominion	7.2	0.0	0.0	0.0	0.0	20.5	6.4	8.4	20.2	20.8	13.6	11.3	108.4
ENGNGF	31.9	0.0	0.0	0.0	0.0	78.1	97.3	109.0	137.0	131.9	65.6	51.9	702.7
ENGHON	32.7	0.0	0.0	0.0	0.0	29.3	22.7	18.5	38.6	41.3	38.7	25.6	247.4
Total Inj	316.1	44.2	94.4	98.7	35.1	127.9	340.7	413.4	520.7	523.3	424.9	223.9	3163.3
Total Req	2062.0	2921.6	3485.6	3132.6	2503.6	1554.3	1100.1	876.1	878.4	886.9	878.7	1092.2	21372.1
=====													
Sources of Supply													
ENGUSGC	615.3	426.2	426.2	398.7	398.7	85.5	7.9	0.0	0.0	0.0	0.0	0.0	2358.7
ENGNiagara	94.2	97.4	97.4	91.1	97.4	92.9	97.4	93.1	97.4	97.4	92.3	97.4	1145.4
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	47.8	31.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.5
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.2	787.6	762.2	760.3	771.6	762.2	787.6	6655.4
Dracut 20	105.3	293.4	312.9	115.0	206.1	37.7	0.0	0.0	0.0	0.0	0.0	0.0	1070.5
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	0.0	5.8	2.3	21.0
ENG Dawn	122.8	126.9	126.9	118.7	122.8	87.6	19.2	0.0	0.0	0.0	0.0	47.8	772.8
DAWN	180.8	186.8	186.8	174.8	180.8	160.5	158.1	0.0	0.0	0.0	0.0	91.4	1320.0
Repsol 40	0.0	74.4	227.5	195.1	23.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1
Dracut 30	429.7	579.6	710.3	786.3	609.6	318.1	3.4	0.0	0.0	0.0	0.0	44.9	3482.0
Engie Combo	3.5	158.8	171.4	188.1	108.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1808.9	2211.9	2576.7	2351.0	2013.9	1551.4	1097.1	873.3	875.5	883.9	875.9	1089.3	18208.8

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	44.2	57.7	67.0	25.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	217.4
ENGPropane	0.0	0.0	114.0	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	148.6
ENGFSMA	178.4	400.5	458.6	435.8	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1738.8
ENGDominion	7.2	28.0	29.0	24.6	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	108.4
ENGNGF	31.9	178.3	189.0	164.6	138.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	702.7
ENGHON	32.7	58.7	60.7	55.0	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.4
Total With	253.1	709.7	908.9	781.6	489.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3163.3
Total Supply	2062.0	2921.6	3485.6	3132.6	2503.6	1554.3	1100.1	876.1	878.4	886.9	878.7	1092.2	21372.1
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	10	13	12
ENGPropane	77	77	77	11	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1160	701	266	0	0	196	459	769	1087	1377	1498
ENGDominion	103	103	75	46	21	1	22	28	37	57	78	91	103
ENGNGF	671	671	493	304	139	0	78	175	284	421	553	619	671
ENGHON	246	246	188	127	72	32	61	84	102	141	182	221	246
Total Inv	2607	2670	2004	1190	507	52	177	515	926	1444	1964	2386	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1768.5	2922.7	3431.5	2964.2	2496.8	1448.5	767.9	470.4	363.0	371.1	468.4	894.1	18367.2
Total Demand	1768.5	2922.7	3431.5	2964.2	2496.8	1448.5	767.9	470.4	363.0	371.1	468.4	894.1	18367.2
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	31.1	35.4	40.7	35.7	30.4	17.7	12.6	5.9	5.4	4.6	5.1	11.1	235.7
Injection	3.1	0.0	0.0	0.0	0.0	1.2	3.2	4.0	5.1	4.9	3.5	1.7	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	34.5	36.8	42.2	37.0	31.5	18.9	15.8	10.0	10.5	9.5	8.6	12.8	267.9
Storage Injections													
ENGLNG	3.5	48.9	44.5	67.0	37.0	0.0	6.5	2.9	2.9	2.9	2.9	2.9	221.9
ENGPropane	0.0	0.0	66.1	25.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	240.3	0.0	0.0	0.0	0.0	0.0	231.1	292.3	319.0	314.6	224.2	116.7	1738.2
ENGDominion	9.2	0.0	0.0	0.0	0.0	18.3	10.0	11.2	28.3	26.5	4.5	2.1	110.1
ENGNGF	39.7	0.0	0.0	0.0	0.0	98.8	62.9	81.3	137.5	118.5	127.6	44.1	710.5
ENGHON	32.2	0.0	0.0	0.0	0.0	10.7	26.1	27.9	41.3	41.2	29.1	37.3	245.9
Total Inj	324.9	48.9	110.5	92.7	37.0	127.8	348.2	427.1	540.7	515.2	399.8	214.7	3187.5
Total Req	2127.8	3008.5	3584.3	3093.8	2565.3	1595.1	1131.9	907.5	914.2	895.8	876.8	1121.6	21822.6
=====													
Sources of Supply													
ENGUSGC	620.4	426.2	426.2	385.0	398.7	88.1	10.4	0.0	0.0	0.0	0.0	0.0	2355.2
ENGNiagara	94.2	97.4	97.4	88.0	97.4	93.5	97.4	93.6	97.4	97.4	93.2	97.4	1144.2
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	66.1	25.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	766.0	777.7	762.2	787.6	6658.9
Dracut 20	155.3	307.4	328.2	191.8	232.8	51.1	0.0	0.0	0.0	0.0	0.0	0.0	1266.6
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.9	2.9	2.9	2.9	2.9	21.0
ENGDAWN	122.8	126.9	126.9	114.6	122.8	90.1	22.9	0.0	0.0	0.0	0.0	50.8	777.9
DAWN	180.8	186.8	186.8	168.7	180.8	165.4	182.9	30.9	30.0	0.0	0.2	98.2	1411.6
Repsol 40	0.0	82.1	225.4	182.0	30.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1
Dracut 30	431.7	601.6	756.6	785.4	626.5	334.9	4.7	0.0	0.0	0.0	0.0	63.9	3605.5
Engie Combo	3.5	157.1	172.9	181.1	115.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1866.0	2254.0	2656.0	2365.2	2072.1	1592.2	1128.9	904.7	911.2	892.9	874.0	1118.6	18635.7

181

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 (Continued) 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	48.9	55.6	67.0	26.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	221.2
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	177.8	434.6	467.9	392.4	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1738.2
ENGDominion	9.2	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.1
ENGNGF	39.7	182.9	189.0	158.5	140.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	710.5
ENGHON	32.2	60.0	60.7	52.0	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	245.9
Total With	261.8	754.5	928.3	728.7	493.2	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3186.8
Total Supply	2127.8	3008.5	3584.3	3093.8	2565.3	1595.1	1131.9	907.5	914.2	895.8	876.8	1121.6	21822.6
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	10	13	13	13	13	13	12
ENGPropane	77	77	77	17	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1126	658	266	0	0	231	523	843	1157	1381	1498
ENGDominion	103	103	75	46	22	2	20	30	41	70	96	101	103
ENGNGF	671	671	488	299	140	0	99	162	243	381	499	627	671
ENGHON	246	246	186	126	74	33	43	69	97	139	180	209	246
Total Inv	2607	2670	1964	1147	511	54	179	525	949	1487	1999	2396	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1826.3	3007.1	3527.1	3045.9	2565.9	1491.7	792.2	487.5	377.0	388.2	490.7	934.2	18933.7
Total Demand	1826.3	3007.1	3527.1	3045.9	2565.9	1491.7	792.2	487.5	377.0	388.2	490.7	934.2	18933.7
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	31.3	35.9	40.5	35.8	30.8	18.1	12.9	7.8	5.7	4.7	5.2	11.5	240.1
Injection	3.1	0.0	0.0	0.0	0.0	1.1	3.0	4.3	5.1	4.6	3.4	1.8	26.4
Withdrawal	0.3	1.5	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	34.6	37.3	42.0	37.1	31.8	19.2	15.9	12.1	10.8	9.3	8.6	13.4	272.1
Storage Injections													
ENGLNG	2.9	49.2	45.8	67.0	38.5	0.0	7.1	2.9	2.9	2.9	2.9	2.3	224.3
ENGPropane	0.0	0.0	61.7	30.1	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	236.9	0.0	0.0	0.0	0.0	0.0	225.0	275.6	319.0	310.6	243.5	108.6	1719.2
ENGDominion	10.1	0.0	0.0	0.0	0.0	24.7	5.0	15.8	28.3	8.3	1.8	16.4	110.5
ENGNGF	38.8	0.0	0.0	0.0	0.0	80.4	58.7	125.5	137.5	132.4	92.6	43.6	709.6
ENGHON	34.2	0.0	0.0	0.0	0.0	22.7	26.1	40.0	41.3	35.3	26.8	21.4	247.8
Total Inj	322.8	49.2	107.5	97.1	38.5	127.8	333.5	471.2	540.7	501.0	379.2	203.9	3172.3
Total Req	2183.7	3093.6	3676.6	3180.1	2636.3	1638.7	1141.6	970.7	928.5	898.5	878.5	1151.4	22378.2
=====													
Sources of Supply													
ENGUSGC	623.3	426.2	426.2	385.0	398.7	91.1	15.0	0.0	0.0	0.0	0.0	0.0	2365.7
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.1	97.4	94.0	97.4	97.4	93.7	97.4	1145.8
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	61.7	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	770.2	780.3	762.2	787.6	6665.7
Dracut 20	164.0	320.8	385.2	267.2	263.4	67.0	0.0	0.0	0.0	0.0	0.0	0.0	1467.7
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGdawn	122.8	126.9	126.9	114.6	122.8	94.5	25.0	0.0	0.0	0.0	0.0	55.4	788.8
DAWN	180.8	186.8	186.8	168.7	180.8	168.3	183.9	93.8	40.2	0.0	1.4	103.8	1495.3
Repsol 40	0.0	90.7	206.6	182.0	40.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	520.1
Dracut 30	478.0	647.6	794.6	814.4	667.9	351.7	6.1	0.0	0.0	0.0	0.0	84.3	3844.7
Engie Combo	2.9	158.6	175.4	174.1	118.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1923.3	2323.4	2730.4	2467.1	2157.8	1635.8	1138.6	967.9	925.6	895.5	875.7	1148.5	19189.6

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 16-Sep-2017
Report 13 (Continued) 13:11:02

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	52.6	53.5	67.0	28.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	225.0
ENGPropane	0.0	0.0	130.8	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	174.5	444.1	483.3	383.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1734.8
ENGDominion	10.1	28.2	29.0	23.1	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.5
ENGNGF	38.8	184.6	189.0	158.5	138.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	709.6
ENGHON	34.2	60.7	60.7	51.3	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.8
Total With	260.4	770.2	946.2	713.0	478.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3188.6
Total Supply	2183.7	3093.6	3676.6	3180.1	2636.3	1638.7	1141.6	970.7	928.5	898.5	878.5	1151.4	22378.2
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	10	2	2	12	9	13	13	13	13	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1116	633	250	0	0	225	501	820	1130	1374	1498
ENGDominion	103	103	74	46	22	2	27	32	48	76	84	86	103
ENGNGF	671	671	486	297	139	0	80	139	265	402	535	627	671
ENGHON	246	246	186	125	74	33	55	81	121	163	198	225	246
Total Inv	2608	2670	1949	1110	494	54	179	510	978	1516	2014	2390	2608
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	16901.8	17376.0	17944.8	18367.2	18933.7	89523.5
Total Demand	16901.8	17376.0	17944.8	18367.2	18933.7	89523.5
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	223.1	227.4	231.9	235.7	240.1	1158.2
Injection	26.5	26.5	26.6	26.6	26.4	132.7
Withdrawal	5.5	5.5	5.6	5.6	5.6	27.8
Total Fuel	255.2	259.4	264.0	267.9	272.1	1318.6
Storage Injections						
ENGLNG	207.5	209.4	217.4	221.9	224.3	1080.4
ENGPropane	131.7	137.7	148.6	160.8	160.8	739.6
ENGFSMA	1739.1	1736.9	1738.8	1738.2	1719.2	8672.2
ENGDominion	108.3	107.4	108.4	110.1	110.5	544.8
ENGNGF	700.3	697.4	702.7	710.5	709.6	3520.6
ENGHON	243.8	246.0	247.4	245.9	247.8	1230.9
Total Inj	3130.6	3134.8	3163.3	3187.5	3172.3	15788.5
Total Req	20287.6	20770.2	21372.1	21822.6	22378.2	106630.6
=====						
Sources of Supply						
ENGUSGC	2348.2	2373.3	2358.7	2355.2	2365.7	11801.0
ENGNiagara	1146.6	1146.6	1145.4	1144.2	1145.8	5728.7
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	62.6	68.6	79.5	91.7	91.7	394.1
ENG-Z4	6558.5	6617.6	6655.4	6658.9	6665.7	33156.1
Dracut 20	795.1	883.3	1070.5	1266.6	1467.7	5483.2
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAwn	738.4	758.8	772.8	777.9	788.8	3836.6
DAWN	1164.9	1217.2	1320.0	1411.6	1495.3	6608.9
Repsol 40	520.1	520.1	520.1	520.1	520.1	2600.7
Dracut 30	3033.5	3245.9	3482.0	3605.5	3844.7	17211.5
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	17172.0	17635.4	18208.8	18635.7	19189.6	90841.6

APPENDIX 6.B.2 BASE CASE DESIGN YEAR MONTHLY REQUIREMENTS

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	208.1	209.4	217.4	221.2	225.0	1081.0
ENGPropane	131.7	137.7	148.6	160.8	160.8	739.6
ENGFSMA	1723.5	1736.9	1738.8	1738.2	1734.8	8672.2
ENGDominion	108.3	107.4	108.4	110.1	110.5	544.8
ENGNGF	700.3	697.4	702.7	710.5	709.6	3520.6
ENGHON	243.8	246.0	247.4	245.9	247.8	1230.9
Total With	3115.6	3134.8	3163.3	3186.8	3188.6	15789.1
=====						
Total Supply	20287.6	20770.2	21372.1	21822.6	22378.2	106630.6
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	12	12	13	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGF	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2607	2607	2608	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

Scen 1334-8-8-17 Pricing-RMix RD to 21-22
DESIGN BASE CASE - Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 9B 16-Sep-2017
Report 9B 13:11:02

Peak Subperiod Demand Forecast by Class

JAN 19, 2018		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	156.8		
ThirtyDay			
TOTAL	156.8		

Peak Subperiod Demand Summary

JAN 19, 2018

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	156.8	156.8	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	156.8	156.8	0.0

JAN 19, 2018			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	156.8		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPProd	13.75	
			ENGniagara	3.14	ENGPropane		28.60			3	3	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			954	61	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			58	56	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		385	57	ENGTGPShort	28.11	0.24
			Dracut 20		ENGHON		1.96			150	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	6.03								ENGPropane	34.60	
			Repsol 40	13.00								ENG3Truck	6.00	
			Dracut 30	28.59								Dracut 30	28.63	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20		
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													18.31	0.04
													12.51	0.39
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	5.93	0.10
													5.84	0.09
Total	156.8		Total	90.30	Total		68.10	0.05		1551		Total		1.53

Peak Subperiod Demand Forecast by Class

JAN 19, 2019		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	161.0		
ThirtyDay			
TOTAL	161.0		

Peak Subperiod Demand Summary

JAN 19, 2019		Daily System Activity			Units: MDT
=====					
AREA	FORECAST				
	TOTAL DEMAND	TOTAL SERVED	TOTAL UNSERVED		
ENGIDemand	161.0	161.0	0.0		
ThirtyDay	0.0	0.0	0.0		
=====					
TOTAL	161.0	161.0	0.0		

JAN 19, 2019			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	160.9		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			6	8	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			915	59	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		381	57	ENGTGPShort	28.11	0.24
			Dracut 20	2.77	ENGHON		1.96			149	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENG3Dawn	4.09								ENGLNG	11.10	
			DAWN	6.03								ENGPropane	34.60	
			Repsol 40	13.00								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	2.80	0.01
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													18.31	0.04
													12.51	0.39
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	5.93	0.10
													5.84	0.09
Total	160.9		Total	94.47	Total		68.10	0.05		1510		Total		1.54

Peak Subperiod Demand Forecast by Class

JAN 19, 2020		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	164.6		
ThirtyDay			
TOTAL	164.6		

Peak Subperiod Demand Summary

JAN 19, 2020

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	164.6	164.6	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	164.6	164.6	0.0

JAN 19, 2020			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	164.6		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGniagara	3.14	ENGPropane		28.60			10	13	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			934	60	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		377	56	ENGTGPShort	28.11	0.24
			Dracut 20	6.42	ENGHON		1.96			150	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	6.03								ENGPropane	34.60	
			Repsol 40	13.00								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	6.45	0.01
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													18.31	0.04
													12.51	0.39
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	5.93	0.10
													5.84	0.09
Total	164.6		Total	98.13	Total		68.10	0.05		1530		Total		1.55

Peak Subperiod Demand Forecast by Class

JAN 19, 2021		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	168.9		
ThirtyDay			
TOTAL	168.9		

Peak Subperiod Demand Summary

JAN 19, 2021

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	168.9	168.9	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	168.9	168.9	0.0

JAN 19, 2021			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	168.9		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPProd	13.75	
			ENGniagara	3.14	ENGPropane		28.60			14	18	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			891	57	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		372	55	ENGTGPShort	28.11	0.24
			Dracut 20	10.73	ENGHON		1.96			149	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	6.03								ENGPropane	34.60	
			Repsol 40	13.00								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	10.75	0.02
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													18.31	0.04
													12.51	0.39
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	5.93	0.10
													5.84	0.09
Total	168.9		Total	102.4	Total		68.10	0.05		1484		Total		1.55

Peak Subperiod Demand Forecast by Class

JAN 19, 2022		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	173.9		
ThirtyDay			
TOTAL	173.9		

Peak Subperiod Demand Summary

JAN 19, 2022

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	173.9	173.9	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	173.9	173.9	0.0

JAN 19, 2022			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	173.9		ENGUSGC	13.75	ENGLNG		10.91			2	16	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		24.52			26	33	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			866	55	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		370	55	ENGTGPShort	28.11	0.24
			Dracut 20	20.00	ENGHON		1.96			148	60	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENG3Dawn	4.09								ENGLNG	10.91	
			DAWN	6.03								ENGPropane	30.52	
			Repsol 40	13.00								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	20.00	0.04
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													18.31	0.04
													12.51	0.39
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	5.93	0.10
													5.84	0.09
Total	173.9		Total	111.7	Total		63.83	0.05		1469		Total		1.57

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	54038	Injection Cost	48	Transportation Cost	2305	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	158.31
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	158.31
Total Variable	54064	Total Variable	94	Total Variable	2305		
Demand/Reservation Co	14697	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	14792	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68856	Net Storage Cost	1762	Net Trans Cost	17615	Total Gas Cost	88233
						Total Revenue	0
						Net Cost	88233

Avg Cost of Served Demand 5.590 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.295 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	15782.9	0.0	15782.9	0.0	15782.9	15782.9	0.0	0	158.3	0.0	
Total	15782.9	0.0	15782.9	0.0	15782.9	15782.9	0.0	0	158.3	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2382.3	18250.0	15867.7			3.0106	7172	0	7172	3.0106
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	65.4	91.7	26.3			15.0000	981	0	981	15.0000
ENG-Z4	6592.1	6690.4	98.3			2.3200	15294	0	15294	2.3200
Dracut 20	211.7	7300.0	7088.3			5.5239	1170	0	1170	5.5239
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	767.5	2190.0	1422.5			3.1684	2432	0	2432	3.1684

202

APPENDIX 6.C.1 HIGH GROWTH NORMAL YEAR RESOURCE MIX

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 08:23:52

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	992.2	992.2	0.0							
Dracut 30	3069.4	10950.0	7880.6			5.7977	17796	0	17796	5.7977
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	16031.4						54064	14792	68856	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	240.7	241.3	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	134.5	134.5	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1774.0	1739.4	0	19.0	1498	96	0.0	16	2573	3509	936
ENGDomion	103	100	108.8	106.7	0	2.1	103	100	0.0	0	178	243	64
ENGNGFG	671	100	725.3	719.6	0	5.7	671	100	5.7	0	1164	1600	436
ENGHON	246	100	236.9	236.9	0	0.0	246	100	0.0	0	427	552	125
Total	2592	97	3220.2	3178.4	0	26.8	2607	98	5.7	15	5426	6940	1515

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	Average Net Cost
ENG TGPPProd	2382.3	0.0	2382.3	7882.5	5500.3	0	5043	0	5043	2.1170	
ENG TGP2Stg	107.8	2.2	105.6	7882.5	7777.0	28	0	0	28	0.2572	
ENG TGPLong	6022.1	0.0	6022.1	8698.1	2676.0	0	0	0	0	0.0000	
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185	
ENG TGPShort	2796.9	23.8	2773.1	10262.0	7488.9	315	2688	0	3003	1.0736	
TrCanCharges	758.8	8.7	750.1	1477.2	727.1	0	698	0	698	0.9193	
IroqCharges	750.1	4.7	745.4	1460.0	714.6	67	640	0	706	0.9417	
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155	
ENGLNG	241.3	0.0	241.3	8654.9	8413.6	0	0	0	0	0.0000	
ENGPropane	134.5	0.0	134.5	6335.0	6200.5	0	0	0	0	0.0000	
ENG C3Truck	134.5	0.0	134.5	4380.0	4245.5	135	0	0	135	1.0000	
Dracut 30	2665.1	5.6	2659.5	10950.0	8290.5	116	4388	0	4504	1.6900	
UnionCharges	767.5	8.7	758.8	1477.2	718.4	0	140	0	140	0.1824	
Dracut 20	620.2	1.3	618.9	7300.0	6681.1	27	1134	0	1161	1.8713	

203

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2274.5	63.4	2211.1	9125.0	6913.9	677	0	0	677	0.2976
Z4toTGPLH	3843.6	32.7	3811.0	7665.0	3854.0	433	0	0	433	0.1126
Z4toStg	2748.5	9.1	2739.4	7882.5	5143.1	136	0	0	136	0.0495
Engie2CG	410.3	1.1	409.2	1057.0	647.8	14	0	0	14	0.0334
██████████	958.3	2.0	956.3	8725.1	7768.8	42	0	0	42	0.0434
██████████	987.9	29.6	958.3	8743.4	7785.2	0	0	0	0	0.0000
Repsol2Drac	4.2	0.1	4.1	15.9	11.8	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	219.7	0.0	219.7	1057.0	837.3	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		201.0				2305	15309		17615	0.5860

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	55035	Injection Cost	48	Transportation Cost	2357	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	164.10
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	164.10
Total Variable	55062	Total Variable	94	Total Variable	2357		
Demand/Reservation Co	14697	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	14792	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	69854	Net Storage Cost	1762	Net Trans Cost	17666	Total Gas Cost	89282
						Total Revenue	0
						Net Cost	89282

Avg Cost of Served Demand 5.449 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.202 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	16386.1	0.0	16386.1	0.0	16386.1	16386.1	0.0	0	164.1	0.0	
Total	16386.1	0.0	16386.1	0.0	16386.1	16386.1	0.0	0	164.1	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2407.8	18250.0	15842.2			2.9020	6988	0	6988	2.9020
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	75.4	91.7	16.3			15.0000	1131	0	1131	15.0000
ENG-Z4	6624.5	6690.4	65.9			2.1144	14007	0	14007	2.1144
Dracut 20	306.6	7300.0	6993.4			5.8313	1788	0	1788	5.8313
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	882.9	2190.0	1307.1			2.8931	2554	0	2554	2.8931

205

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	992.2	992.2	0.0							
Dracut 30	3384.8	10950.0	7565.2			5.8730	19879	0	19879	5.8730
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	16624.8						55062	14792	69854	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.4	241.4	0	0.0	12	95	0.0	0	57	55	-2
ENGPropane	77	100	144.5	144.5	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3509	3140	-370
ENGDomion	103	100	109.1	107.0	0	2.1	103	100	0.0	0	243	222	-21
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1600	1432	-168
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	552	518	-34
Total	2607	98	3225.9	3199.1	0	26.8	2607	98	5.6	0	6940	6345	-595

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2407.8	0.0	2407.8	7882.5	5474.7	0	5043	0	5043	2.0945
ENG TGP2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6084.0	0.0	6084.0	8698.1	2614.1	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2807.6	23.9	2783.7	10262.0	7478.3	316	2688	0	3004	1.0699
TrCanCharges	872.8	10.0	862.8	1477.2	614.4	0	698	0	698	0.7992
IroqCharges	862.8	5.3	857.4	1460.0	602.6	77	640	0	716	0.8302
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.4	0.0	241.4	8654.9	8413.5	0	0	0	0	0.0000
ENGPropane	144.5	0.0	144.5	6335.0	6190.5	0	0	0	0	0.0000
ENG C3Truck	144.5	0.0	144.5	4380.0	4235.5	145	0	0	145	1.0000
Dracut 30	2914.7	6.1	2908.6	10950.0	8041.4	127	4388	0	4515	1.5490
UnionCharges	882.9	10.1	872.8	1477.2	604.3	0	140	0	140	0.1586
Dracut 20	780.9	1.6	779.3	7300.0	6520.7	34	1134	0	1168	1.4951

206

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2301.5	64.1	2237.3	9125.0	6887.7	685	0	0	685	0.2976
Z4toTGPLH	3879.6	33.0	3846.6	7665.0	3818.4	437	0	0	437	0.1126
Z4toStg	2744.9	9.1	2735.9	7882.5	5146.7	136	0	0	136	0.0495
Engie2CG	409.6	1.1	408.5	1057.0	648.5	14	0	0	14	0.0334
██████████	958.1	2.0	956.1	8725.1	7769.0	42	0	0	42	0.0434
Repsol2Drac	987.7	29.6	958.1	8743.4	7785.4	0	0	0	0	0.0000
██████████	4.4	0.1	4.3	15.9	11.6	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
Engie2ENGLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Dawn2Dracut	220.4	0.0	220.4	1057.0	836.6	220	0	0	220	1.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		206.3				2357	15309		17666	0.5701

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	56676	Injection Cost	48	Transportation Cost	2395	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	169.45
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	169.45
Total Variable	56703	Total Variable	94	Total Variable	2395		
Demand/Reservation Co	14697	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	14792	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	71495	Net Storage Cost	1762	Net Trans Cost	17704	Total Gas Cost	90961
						Total Revenue	0
						Net Cost	90961

Avg Cost of Served Demand 5.332 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.132 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17059.9	0.0	17059.9	0.0	17059.9	17059.9	0.0	0	169.5	0.0	
Total	17059.9	0.0	17059.9	0.0	17059.9	17059.9	0.0	0	169.5	0.0	

Supply Summary										
Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2380.4	18300.0	15919.6			2.7909	6643	0	6643	2.7909
ENGNiagara	1145.5	1170.5	25.0			2.1354	2446	0	2446	2.1354
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	82.9	91.7	8.9			15.0000	1243	0	1243	15.0000
ENG-Z4	6663.2	6698.7	35.5			1.9744	13156	0	13156	1.9744
Dracut 20	463.6	7320.0	6856.4			5.8634	2718	0	2718	5.8634
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	1012.7	2196.0	1183.3			2.7781	2813	0	2813	2.7781

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	992.2	992.2	0.0							
Dracut 30	3758.3	10980.0	7221.7			5.7781	21716	0	21716	5.7781
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	17303.1						56703	14792	71495	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.6	241.6	0	0.0	12	95	0.0	0	55	54	-0
ENGPropane	77	100	152.0	152.0	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3140	2991	-148
ENGDominion	103	100	109.7	107.6	0	2.1	103	100	0.0	0	222	211	-11
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1432	1363	-68
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	518	492	-26
Total	2607	98	3234.2	3207.3	0	26.8	2607	98	5.6	0	6345	6091	-254

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	2380.4	0.0	2380.4	7904.1	5523.8	0	5043	0	5043	2.1187
ENG TGP2Stg	106.4	2.2	104.2	7904.1	7800.0	27	0	0	27	0.2572
ENG TGPLong	6095.0	0.0	6095.0	8719.7	2624.7	0	0	0	0	0.0000
ENG TGPNBD	1145.5	7.1	1138.4	1142.7	4.3	98	267	0	365	0.3187
ENG TGPSHORT	2808.2	23.9	2784.3	10290.1	7505.8	316	2688	0	3004	1.0697
TrCanCharges	1001.1	11.5	989.6	1481.2	491.6	0	698	0	698	0.6968
IroqCharges	989.6	6.1	983.5	1464.0	480.5	88	640	0	728	0.7352
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990
ENGLNG	241.6	0.0	241.6	8678.6	8437.0	0	0	0	0	0.0000
ENGPropane	152.0	0.0	152.0	6370.0	6218.0	0	0	0	0	0.0000
ENG C3Truck	152.0	0.0	152.0	4392.0	4240.0	152	0	0	152	1.0000
Dracut 30	3197.9	6.7	3191.2	10980.0	7788.8	139	4388	0	4527	1.4157
UnionCharges	1012.7	11.5	1001.1	1481.2	480.1	0	140	0	140	0.1383
Dracut 20	1028.4	2.2	1026.2	7320.0	6293.8	45	1134	0	1178	1.1458

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2274.0	63.4	2210.6	9150.0	6939.4	677	0	0	677	0.2976
Z4toTGPH	3917.7	33.3	3884.4	7686.0	3801.6	441	0	0	441	0.1126
Z4toStg	2745.5	9.1	2736.5	7904.1	5167.7	136	0	0	136	0.0495
Engie2CG	409.4	1.1	408.3	1064.0	655.7	14	0	0	14	0.0334
██████████	958.1	2.0	956.1	8749.0	7792.9	42	0	0	42	0.0434
Repsol2Drac	987.7	29.6	958.1	8767.4	7809.3	0	0	0	0	0.0000
██████████	4.4	0.1	4.3	16.0	11.7	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
Engie2ENGLNG	0.0	0.0	0.0	2928.0	2928.0	0	0	0	0	0.0000
Dawn2Dracut	220.6	0.0	220.6	1064.0	843.4	221	0	0	221	1.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		210.7				2395	15309		17704	0.5548

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	60507	Injection Cost	48	Transportation Cost	2433	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	175.56
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	175.56
Total Variable	60534	Total Variable	94	Total Variable	2433		
Demand/Reservation Co	14697	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	14792	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	75326	Net Storage Cost	1762	Net Trans Cost	17743	Total Gas Cost	94831
						Total Revenue	0
						Net Cost	94831

Avg Cost of Served Demand 5.367 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.204 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17667.9	0.0	17667.9	0.0	17667.9	17667.9	0.0	0	175.6	0.0	
Total	17667.9	0.0	17667.9	0.0	17667.9	17667.9	0.0	0	175.6	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2375.6	18250.0	15874.4			2.8093	6674	0	6674	2.8093
ENGNiagara	1144.3	1167.3	23.0			2.1440	2453	0	2453	2.1440
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	91.4	91.7	0.3			15.0000	1371	0	1371	15.0000
ENG-Z4	6665.0	6690.4	25.4			1.9829	13216	0	13216	1.9829
Dracut 20	672.2	7300.0	6627.8			5.9909	4027	0	4027	5.9909
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	1137.9	2190.0	1052.1			2.7563	3137	0	3137	2.7563

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	992.2	992.2	0.0							
Dracut 30	4032.9	10950.0	6917.1			5.8824	23724	0	23724	5.8824
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17915.6						60534	14792	75326	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.4	241.4	0	0.0	12	95	0.0	0	54	54	0
ENGPropane	77	100	160.5	160.5	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	2991	3017	25
ENGDomion	103	100	108.5	106.4	0	2.1	103	100	0.0	0	211	212	1
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1363	1376	12
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	492	491	-1
Total	2607	98	3240.2	3213.4	0	26.8	2607	98	5.6	0	6091	6129	38

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2375.6	0.0	2375.6	7882.5	5506.9	0	5043	0	5043	2.1229
ENG TGP2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6094.6	0.0	6094.6	8698.1	2603.5	0	0	0	0	0.0000
ENG TGPNBD	1144.3	7.1	1137.2	1139.5	2.4	98	267	0	365	0.3190
ENG TGPShort	2805.8	23.8	2782.0	10262.0	7480.0	316	2688	0	3004	1.0705
TrCanCharges	1125.0	12.9	1112.0	1477.2	365.1	0	698	0	698	0.6201
IroqCharges	1112.0	6.9	1105.1	1460.0	354.9	99	640	0	738	0.6640
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.4	0.0	241.4	8654.9	8413.5	0	0	0	0	0.0000
ENGPropane	160.5	0.0	160.5	6335.0	6174.5	0	0	0	0	0.0000
ENG C3Truck	160.5	0.0	160.5	4380.0	4219.5	161	0	0	161	1.0000
Dracut 30	3566.0	7.5	3558.5	10950.0	7391.5	155	4388	0	4543	1.2740
UnionCharges	1137.9	13.0	1125.0	1477.2	352.2	0	140	0	140	0.1230
Dracut 20	1143.4	2.4	1141.0	7300.0	6159.0	50	1134	0	1183	1.0349

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2269.3	63.2	2206.0	9125.0	6919.0	675	0	0	675	0.2976
Z4toTGPH	3921.9	33.3	3888.5	7665.0	3776.5	442	0	0	442	0.1126
Z4toStg	2743.1	9.1	2734.1	7882.5	5148.5	136	0	0	136	0.0495
Engie2CG	409.6	1.1	408.5	1057.0	648.5	14	0	0	14	0.0334
██████████	958.1	2.0	956.1	8725.1	7769.0	42	0	0	42	0.0434
Repsol2Drac	987.7	29.6	958.1	8743.4	7785.4	0	0	0	0	0.0000
██████████	4.4	0.1	4.3	15.9	11.6	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.4	0.0	220.4	1057.0	836.6	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		215.2				2433	15309		17743	0.5414

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	65559	Injection Cost	48	Transportation Cost	2473	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	182.50
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	182.50
Total Variable	65587	Total Variable	94	Total Variable	2473		
Demand/Reservation Co	14697	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	14792	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	80379	Net Storage Cost	1762	Net Trans Cost	17783	Total Gas Cost	99924
						Total Revenue	0
						Net Cost	99924

Avg Cost of Served Demand 5.433 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.315 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	18392.4	0.0	18392.4	0.0	18392.4	18392.4	0.0	0	182.5	0.0
Total	18392.4	0.0	18392.4	0.0	18392.4	18392.4	0.0	0	182.5	0.0

Supply Summary										
Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2385.3	18250.0	15864.7			2.8351	6763	0	6763	2.8351
ENGNiagara	1146.0	1167.3	21.3			2.1909	2511	0	2511	2.1909
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6672.7	6690.4	17.7			2.0467	13657	0	13657	2.0467
Dracut 20	934.5	7300.0	6365.5			6.4199	6000	0	6000	6.4199
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	1250.5	2190.0	939.5			2.7673	3460	0	3460	2.7673

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	992.2	992.2	0.0							
Dracut 30	4352.2	10950.0	6597.8			5.9439	25869	0	25869	5.9439
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	18629.1						65587	14792	80379	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.2	241.2	0	0.0	12	95	0.0	0	54	55	1
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1759.8	1756.5	0	18.8	1482	95	0.0	-16	3017	3085	68
ENGDomion	103	100	108.7	106.6	0	2.1	103	100	0.0	0	212	218	7
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1376	1419	43
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	491	505	13
Total	2607	98	3224.7	3213.7	0	26.6	2591	97	5.6	-16	6129	6261	132

Transportation Summary										
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2385.3	0.0	2385.3	7882.5	5497.2	0	5043	0	5043	2.1143
ENG TGP2Stg	106.3	2.2	104.1	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6127.1	0.0	6127.1	8698.1	2571.0	0	0	0	0	0.0000
ENG TGPBND	1146.0	7.1	1138.9	1139.5	0.7	98	267	0	365	0.3186
ENG TGPShort	2806.0	23.9	2782.2	10262.0	7479.8	316	2688	0	3004	1.0705
TrCanCharges	1236.2	14.2	1222.0	1477.2	255.1	0	698	0	698	0.5643
IroqCharges	1222.0	7.6	1214.4	1460.0	245.6	108	640	0	748	0.6123
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.2	0.0	241.2	8654.9	8413.7	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3864.1	8.1	3856.0	10950.0	7094.0	168	4388	0	4556	1.1791
UnionCharges	1250.5	14.2	1236.2	1477.2	240.9	0	140	0	140	0.1120
Dracut 20	1426.8	3.0	1423.8	7300.0	5876.2	62	1134	0	1196	0.8380

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2279.0	63.5	2215.5	9125.0	6909.5	678	0	0	678	0.2976
Z4toTGPLH	3945.1	33.5	3911.6	7665.0	3753.4	444	0	0	444	0.1126
Z4toStg	2727.6	9.0	2718.6	7882.5	5163.9	135	0	0	135	0.0495
Engie2CG	409.8	1.1	408.7	1057.0	648.3	14	0	0	14	0.0334
██████████	958.2	2.0	956.2	8725.1	7768.9	42	0	0	42	0.0434
Repsol2Drac	987.8	29.6	958.2	8743.4	7785.3	0	0	0	0	0.0000
██████████	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.2	0.0	220.2	1057.0	836.8	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		220.1				2473	15309		17783	0.5269

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	291815	Injection Cost	238	Transportation Cost	11963	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	230	Other Variable Cost	0	System Served	182.50
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	182.50
Total Variable	291950	Total Variable	469	Total Variable	11963		
Demand/Reservation Co	73487	Demand Cost	3477	Demand Cost	76547		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	73959	Total Fixed	8343	Total Fixed	76547		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	365909	Net Storage Cost	8812	Net Trans Cost	88511	Total Gas Cost	463231
						Total Revenue	0
						Net Cost	463231

Avg Cost of Served Demand 5.431 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.230 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary												
Class	Demand Before	DSM	DSM Impact	Net Demand	Imbal. Served	Demand After	Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	85289.2		0.0	85289.2	0.0	85289.2		85289.2	0.0	0	182.5	0.0
Total	85289.2		0.0	85289.2	0.0	85289.2		85289.2	0.0	0	182.5	0.0

Supply Summary										
Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11931.4	91300.0	79368.6			2.8697	34239	0	34239	2.8697
ENGNiagara	5729.0	5839.5	110.6			2.2007	12608	0	12608	2.2007
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	406.9	458.7	51.9			15.0000	6103	0	6103	15.0000
ENG-Z4	33217.6	33460.3	242.7			2.0872	69330	0	69330	2.0872
Dracut 20	2588.6	36520.0	33931.4			6.0658	15702	0	15702	6.0658
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DliqSummer	105.0	105.0	0.0							
ENG Dawn	5051.5	10956.0	5904.5			2.8499	14396	0	14396	2.8499

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	4960.8	4960.8	0.0							
Dracut 30	18597.6	54780.0	36182.4			5.8600	108983	0	108983	5.8600
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	86504.1						291950	73959	365909	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1206.3	1206.9	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	752.3	752.3	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8860.4	8765.5	0	94.8	1482	95	0.0	0	2573	3085	512
ENGDomion	103	100	544.9	534.3	0	10.6	103	100	0.0	0	178	218	40
ENGNGFG	671	100	3608.8	3580.3	0	28.5	671	100	28.3	0	1164	1419	255
ENGHON	246	100	1172.6	1172.6	0	0.0	246	100	0.0	0	427	505	78
Total	2592	97	16145.2	16011.9	0	133.9	2591	97	28.3	-1	5426	6261	836

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	11931.4	0.0	11931.4	39434.3	27502.9	0	25216	0	25216	2.1134
ENG TGP2Stg	533.1	10.9	522.2	39434.3	38912.1	137	0	0	137	0.2572
ENG TGPLong	30422.7	0.0	30422.7	43512.1	13089.3	0	0	0	0	0.0000
ENG TGPBND	5729.0	35.5	5693.5	5700.8	7.3	489	1337	0	1826	0.3187
ENG TGPSHORT	14024.4	119.2	13905.2	51338.0	37432.8	1580	13438	0	15018	1.0708
TrCanCharges	4994.0	57.4	4936.5	7389.8	2453.3	0	3488	0	3488	0.6984
IroqCharges	4936.5	30.6	4905.9	7304.0	2398.1	438	3199	0	3637	0.7367
ENG PNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	1206.9	0.0	1206.9	43298.1	42091.3	0	0	0	0	0.0000
ENGPropane	752.3	0.0	752.3	31710.0	30957.7	0	0	0	0	0.0000
ENG C3Truck	752.3	0.0	752.3	21912.0	21159.7	752	0	0	752	1.0000
Dracut 30	16207.8	34.0	16173.7	54780.0	38606.3	704	21942	0	22645	1.3972
UnionCharges	5051.5	57.5	4994.0	7389.8	2395.9	0	700	0	700	0.1386
Dracut 20	4999.8	10.5	4989.3	36520.0	31530.7	217	5668	0	5885	1.1772

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	11398.3	317.7	11080.6	45650.0	34569.4	3392	0	0	3392	0.2976
Z4toTGPH	19507.9	165.8	19342.1	38346.0	19003.9	2197	0	0	2197	0.1126
Z4toStg	13709.7	45.2	13664.4	39434.3	25769.9	679	0	0	679	0.0495
Engie2CG	2048.7	5.7	2043.0	5292.0	3249.0	68	0	0	68	0.0334
██████████	4790.7	10.1	4780.7	43649.3	38868.7	208	0	0	208	0.0434
██████████	4938.9	148.2	4790.7	43741.2	38950.5	0	0	0	0	0.0000
Repsol2Drac	21.9	0.7	21.3	79.5	58.3	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	14608.0	14608.0	0	0	0	0	0.0000
Engie2ENGLNG	1101.3	0.0	1101.3	5292.0	4190.7	1101	0	0	1101	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		1053.3				11963	76547		88511	0.5550

RESOURCE MIX RESULTS

Units: MDT

=====

	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	0.00
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	24.80
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments		NOV 2017	OCT 2022	0.00	150.00	23.90
		NOV 2017	OCT 2022	0.00	150.00	23.95
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	0.00
		NOV 2017	OCT 2022	0.00	150.00	0.00

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1510.8	2440.0	2921.4	2615.3	2123.6	1217.8	707.8	424.1	321.0	319.4	404.5	777.2	15782.9
Total Demand	1510.8	2440.0	2921.4	2615.3	2123.6	1217.8	707.8	424.1	321.0	319.4	404.5	777.2	15782.9
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.3	32.8	36.4	35.1	26.0	12.2	7.6	4.8	4.2	4.2	4.7	8.6	201.0
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.2	4.1	5.0	5.1	4.3	1.9	26.8
Withdrawal	0.4	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Total Fuel	28.0	34.0	37.9	36.5	27.2	13.2	9.8	8.9	9.2	9.3	9.0	10.4	233.5
Storage Injections													
ENGLNG	2.9	35.8	68.7	67.0	45.3	0.0	7.1	2.9	0.0	0.0	8.7	2.3	240.7
ENGPropane	0.0	0.0	46.8	18.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	134.5
ENGFSMA	257.0	0.0	0.0	0.0	0.0	0.0	138.9	286.8	316.3	319.0	297.8	139.0	1755.0
ENGDominion	9.2	0.0	0.0	0.0	0.0	10.1	0.0	4.3	23.1	28.3	22.7	8.9	106.7
ENGNGF	48.8	0.0	0.0	0.0	0.0	92.7	86.9	113.8	137.5	134.7	83.0	22.1	719.6
ENGHON	26.9	0.0	0.0	0.0	0.0	26.8	9.7	22.3	41.3	41.1	38.7	30.1	236.9
Total Inj	344.8	35.8	115.5	85.6	45.3	129.6	254.3	441.6	529.8	534.7	462.4	213.9	3193.4
Total Req	1883.7	2509.7	3074.8	2737.3	2196.2	1360.6	971.9	874.6	860.1	863.4	875.9	1001.5	19209.8
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	397.9	88.6	21.7	0.0	0.0	0.0	0.0	26.3	2382.3
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	46.8	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.4
ENG-Z4	249.0	257.3	257.3	232.4	257.3	756.4	787.6	759.6	744.9	748.2	754.5	787.6	6592.1
Dracut 20	12.9	8.4	59.0	40.5	71.8	19.0	0.0	0.0	0.0	0.0	0.0	0.0	211.7
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAWN	110.5	126.9	126.9	114.6	114.3	92.8	28.7	0.0	0.0	0.0	0.0	52.7	767.5
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	241.2	308.5	347.3	95.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	992.2
Dracut 30	528.8	552.2	614.6	547.8	501.9	299.7	9.9	0.0	0.0	0.0	0.0	14.5	3069.4
Engie Combo	2.9	149.4	185.4	188.2	104.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1616.9	1870.1	2134.4	1972.8	1649.5	1357.8	968.9	871.8	857.2	860.4	873.1	998.6	16031.4

221

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.8	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.3
ENGPropane	0.0	0.0	115.9	18.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134.5
ENGFSMA	179.0	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1739.4
ENGDominion	9.2	22.4	29.0	25.3	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.7
ENGNGF	48.8	158.6	189.0	170.7	152.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	719.6
ENGHON	26.9	54.0	60.7	54.0	41.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	236.9
Total With	266.8	639.7	940.3	764.6	546.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3178.4
Total Supply	1883.7	2509.7	3074.8	2737.3	2196.2	1360.6	971.9	874.6	860.1	863.4	875.9	1001.5	19209.8
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1192	726	297	0	0	139	426	742	1061	1359	1482
ENGDominion	103	103	80	51	26	5	15	15	20	43	71	94	103
ENGNGF	671	671	512	323	152	0	93	180	293	431	566	649	671
ENGHON	246	246	192	132	78	36	63	73	95	136	177	216	246
Total Inv	2592	2670	2066	1241	562	61	188	439	878	1405	1936	2396	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Forecast Demand													
ENGIDesign	1565.1	2531.9	3023.3	2712.0	2201.1	1257.7	734.0	443.6	338.3	339.7	429.4	810.0	16386.1
Total Demand	1565.1	2531.9	3023.3	2712.0	2201.1	1257.7	734.0	443.6	338.3	339.7	429.4	810.0	16386.1
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.8	33.1	36.9	34.8	26.9	12.5	7.8	4.9	4.4	4.6	6.5	9.1	206.3
Injection	3.4	0.0	0.0	0.0	0.0	1.0	2.1	3.9	4.9	5.1	4.7	1.8	26.8
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.5	34.3	38.4	36.1	28.1	13.5	10.0	8.8	9.2	9.7	11.3	10.9	238.8
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.3	0.0	7.1	2.9	0.0	0.0	8.7	2.3	241.4
ENGPropane	0.0	0.0	52.4	23.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	144.5
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	137.5	277.2	313.1	319.0	307.1	144.0	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	13.7	4.2	2.5	20.9	28.1	22.0	5.5	107.0
ENGNGF	44.4	0.0	0.0	0.0	0.0	87.9	71.8	106.0	136.2	136.0	120.9	12.0	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	28.7	5.3	23.1	41.3	41.3	40.0	27.9	234.5
Total Inj	343.4	35.8	121.2	90.0	45.3	130.3	237.4	423.2	523.0	536.0	510.3	203.2	3199.1
Total Req	1937.0	2602.0	3182.9	2838.1	2274.6	1401.4	981.4	875.6	870.6	885.3	950.9	1024.1	19824.0
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	407.8	90.6	26.2	0.0	0.0	0.0	0.0	35.5	2407.8
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	52.4	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.4
ENG-Z4	249.0	257.3	257.3	232.4	257.3	759.2	787.6	760.6	755.4	762.3	758.5	787.6	6624.5
Dracut 20	13.3	17.2	93.5	66.0	89.0	27.7	0.0	0.0	0.0	0.0	0.0	0.0	306.6
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	126.0	98.0	29.6	0.0	0.0	7.8	71.0	59.3	882.9
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	244.8	318.2	328.9	100.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	992.2
Dracut 30	555.3	636.7	667.3	635.8	532.2	322.0	14.1	0.0	0.0	0.0	0.0	21.3	3384.8
Engie Combo	3.5	149.4	185.4	184.6	107.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1656.7	1967.0	2236.9	2068.7	1726.6	1398.6	978.5	872.8	867.6	882.4	948.0	1021.2	16624.8

223

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.4
ENGPropane	0.0	0.0	121.5	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.5
ENGFSMA	196.1	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	25.3	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.0
ENGNGF	44.4	157.7	189.0	170.7	153.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	50.1	60.7	54.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	634.9	946.0	769.5	548.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3199.1
Total Supply	1937.0	2602.0	3182.9	2838.1	2274.6	1401.4	981.4	875.6	870.6	885.3	950.9	1024.1	19824.0
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	726	297	0	0	138	415	728	1047	1354	1498
ENGDominion	103	103	80	51	26	6	20	24	26	47	75	97	103
ENGNGF	671	671	513	324	153	0	88	160	266	402	538	659	671
ENGHON	246	246	196	135	81	39	67	73	96	137	178	218	246
Total Inv	2607	2670	2071	1246	566	64	191	426	846	1366	1899	2407	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Forecast Demand													
ENGIDesign	1626.2	2611.6	3117.7	2859.6	2268.7	1305.1	764.6	466.2	357.7	363.6	457.1	861.9	17059.9
Total Demand	1626.2	2611.6	3117.7	2859.6	2268.7	1305.1	764.6	466.2	357.7	363.6	457.1	861.9	17059.9
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	25.0	33.3	37.1	35.4	26.9	12.9	10.3	6.6	5.1	4.6	5.0	8.6	210.7
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.5	4.1	5.1	5.0	4.1	1.7	26.8
Withdrawal	0.4	1.2	1.5	1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.7	34.4	38.6	36.8	28.2	13.8	12.8	10.7	10.2	9.5	9.1	10.3	243.2
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.1	45.4	0.0	7.1	2.9	2.9	0.0	5.8	2.3	241.6
ENGPropane	0.0	0.0	56.2	26.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	152.0
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	160.8	281.9	319.0	319.0	295.1	122.1	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	9.1	1.9	2.7	28.3	28.0	21.4	6.0	107.6
ENGNGF	44.4	0.0	0.0	0.0	0.0	90.6	96.9	127.6	137.5	122.5	62.1	33.7	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	29.2	32.0	38.7	41.3	36.6	17.3	12.6	234.5
Total Inj	343.4	35.8	124.9	93.8	45.4	129.0	310.2	465.2	540.7	517.7	413.2	188.1	3207.3
Total Req	1998.3	2681.8	3281.2	2990.2	2342.3	1447.9	1087.6	942.1	908.6	890.8	879.3	1060.3	20510.4
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	398.7	396.0	94.1	28.8	0.0	0.0	0.0	0.0	0.0	2380.4
ENGNiagara	94.2	97.4	97.4	91.1	97.4	92.0	97.4	93.5	97.4	97.4	93.0	97.4	1145.5
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	56.2	26.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.9
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.2	787.6	762.2	764.1	775.6	762.2	787.6	6663.2
Dracut 20	24.2	39.8	154.0	96.6	106.2	42.8	0.0	0.0	0.0	0.0	0.0	0.0	463.6
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	0.0	5.8	2.3	21.0
ENG Dawn	122.8	126.9	126.9	118.7	126.9	103.5	125.8	65.7	26.4	0.0	0.0	69.1	1012.7
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	247.9	322.5	316.5	105.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	992.2
Dracut 30	605.6	706.6	711.1	702.4	584.3	343.5	21.5	0.0	0.0	0.0	0.0	83.2	3758.3
Engie Combo	3.5	142.7	185.4	188.1	110.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1717.9	2055.9	2349.1	2190.3	1793.5	1445.0	1084.6	939.3	905.7	887.9	876.5	1057.4	17303.1

225

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.1	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.6
ENGPropane	0.0	0.0	125.3	26.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.0
ENGFSMA	196.1	368.9	448.3	446.6	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	26.1	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.6
ENGNGF	44.4	150.7	189.0	176.8	154.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	56.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	625.9	932.1	799.9	548.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3207.3
Total Supply	1998.3	2681.8	3281.2	2990.2	2342.3	1447.9	1087.6	942.1	908.6	890.8	879.3	1060.3	20510.4
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	10	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	743	297	0	0	161	443	762	1081	1376	1498
ENGDominion	103	103	80	51	25	5	14	16	19	47	75	97	103
ENGNGF	671	671	520	331	154	0	91	187	315	453	575	637	671
ENGHON	246	246	198	137	81	39	68	100	138	180	216	234	246
Total Inv	2607	2670	2080	1273	567	63	189	497	959	1497	2011	2422	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1696.4	2712.6	3225.3	2890.7	2346.7	1355.7	796.1	488.0	376.3	384.8	485.9	909.4	17667.9
Total Demand	1696.4	2712.6	3225.3	2890.7	2346.7	1355.7	796.1	488.0	376.3	384.8	485.9	909.4	17667.9
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	25.1	33.5	37.3	34.6	27.5	13.2	10.5	7.6	5.5	5.6	5.7	9.0	215.2
Injection	3.4	0.0	0.0	0.0	0.0	0.8	2.6	4.5	5.1	5.1	3.8	1.4	26.8
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.8	34.7	38.8	35.9	28.7	14.0	13.1	12.1	10.6	10.7	9.6	10.4	247.7
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.3	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.4
ENGPropane	0.0	0.0	60.4	31.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.5
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	188.6	295.0	319.0	319.0	286.3	90.0	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	0.9	0.9	14.7	28.1	28.3	18.8	4.6	106.4
ENGNGF	44.4	0.0	0.0	0.0	0.0	101.7	73.7	130.3	137.5	137.5	46.8	43.1	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	25.5	7.3	25.6	41.3	41.3	40.0	25.3	233.3
Total Inj	343.4	35.8	129.2	98.0	45.3	128.2	289.2	480.0	540.5	540.7	406.3	176.8	3213.4
Total Req	2068.7	2783.1	3393.3	3024.6	2420.7	1497.9	1098.5	980.1	927.5	936.2	901.8	1096.6	21129.0
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	399.4	97.3	31.2	0.0	0.0	0.0	0.0	0.0	2375.6
ENGNiagara	94.2	97.4	97.4	88.0	97.4	92.8	97.4	94.0	97.4	97.4	93.6	97.4	1144.3
ENGPNGTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	60.4	31.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.4
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	770.0	779.8	762.2	787.6	6665.0
Dracut 20	60.6	67.0	211.9	143.4	128.6	60.8	0.0	0.0	0.0	0.0	0.0	0.0	672.2
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	126.9	109.4	126.4	103.1	39.3	38.1	24.8	78.6	1137.9
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	248.0	322.5	307.7	113.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	992.2
Dracut 30	639.6	769.4	754.3	738.8	625.9	365.7	29.4	0.0	0.0	0.0	0.0	110.0	4032.9
Engie Combo	3.5	149.0	185.4	181.1	111.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1788.3	2152.3	2454.4	2232.4	1870.0	1495.0	1095.6	977.2	924.5	933.2	899.0	1093.7	17915.6

227

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.4
ENGPropane	0.0	0.0	129.5	31.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.5
ENGFSMA	196.1	368.9	451.6	443.4	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.2	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.4
ENGNGF	44.4	155.6	189.0	170.7	155.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.4	630.8	938.8	792.3	550.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3213.4
Total Supply	2068.7	2783.1	3393.3	3024.6	2420.7	1497.9	1098.5	980.1	927.5	936.2	901.8	1096.6	21129.0
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	740	297	0	0	189	484	803	1122	1408	1498
ENGDominion	103	103	80	52	27	6	7	8	23	51	79	98	103
ENGNGF	671	671	515	326	155	0	102	175	306	443	581	628	671
ENGHON	246	246	198	137	83	40	65	73	98	140	181	221	246
Total Inv	2607	2670	2075	1265	571	66	191	477	954	1492	2030	2433	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1768.8	2818.0	3347.1	2999.2	2435.0	1409.7	829.2	510.6	394.7	406.4	514.1	959.5	18392.4
Total Demand	1768.8	2818.0	3347.1	2999.2	2435.0	1409.7	829.2	510.6	394.7	406.4	514.1	959.5	18392.4
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	25.3	33.7	37.6	34.5	28.1	13.6	10.7	7.9	5.9	6.2	7.4	9.3	220.1
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.5	4.4	5.1	5.1	4.1	1.2	26.6
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	29.0	34.9	39.1	35.9	29.3	14.5	13.2	12.3	11.0	11.3	11.5	10.5	252.4
Storage Injections													
ENGLNG	3.5	35.8	68.6	67.0	45.3	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.2
ENGPropane	0.0	0.0	57.1	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	216.1	308.8	318.7	318.4	266.3	54.1	1740.9
ENGDominion	10.1	0.0	0.0	0.0	0.0	3.0	2.7	15.0	28.0	28.2	16.8	2.9	106.6
ENGNGF	44.4	0.0	0.0	0.0	0.0	106.4	17.9	93.8	135.9	137.5	106.8	72.4	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	18.7	12.2	32.9	41.3	41.3	37.3	22.7	233.3
Total Inj	343.4	35.8	125.7	101.6	45.3	128.0	267.6	464.8	538.5	540.0	441.6	165.9	3198.1
Total Req	2141.2	2888.7	3511.9	3136.7	2509.7	1552.2	1110.0	987.7	944.2	957.6	967.1	1135.9	21842.8
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	403.2	102.4	32.0	0.0	0.0	0.0	0.0	0.0	2385.3
ENGNiagara	94.2	97.4	97.4	88.0	97.4	93.6	97.4	94.2	97.4	97.4	94.2	97.4	1146.0
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	57.1	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	775.1	782.5	762.2	787.6	6672.7
Dracut 20	66.9	109.7	300.7	218.4	158.1	80.8	0.0	0.0	0.0	0.0	0.0	0.0	934.5
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	126.9	113.9	126.9	110.5	50.9	57.0	89.4	83.7	1250.5
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	248.0	322.5	297.6	124.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	992.2
Dracut 30	705.9	833.5	792.2	777.0	670.1	389.6	39.6	0.0	0.0	0.0	0.0	144.2	4352.2
Engie Combo	3.5	149.0	185.4	181.1	111.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1860.9	2259.2	2578.0	2339.1	1957.7	1549.3	1107.1	984.9	941.2	954.7	964.3	1132.9	18629.1

229

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.7	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.2
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	449.8	445.1	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.5	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.6
ENGNGF	44.4	154.3	189.0	170.7	156.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.3	629.5	933.9	797.6	552.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3213.7
=====													
Total Supply	2141.2	2888.7	3511.9	3136.7	2509.7	1552.2	1110.0	987.7	944.2	957.6	967.1	1135.9	21842.8
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	742	297	0	0	216	525	844	1162	1428	1498
ENGDominion	103	103	80	52	26	6	9	12	27	55	83	100	103
ENGNGF	671	671	516	327	157	0	106	124	218	354	492	598	671
ENGHON	246	246	198	137	83	40	58	71	104	145	186	224	246
Total Inv	2607	2670	2076	1268	572	65	190	455	917	1453	1990	2428	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.C.2 HIGH GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1329 Base Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:23:52

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	15782.9	16386.1	17059.9	17667.9	18392.4	85289.2
Total Demand	15782.9	16386.1	17059.9	17667.9	18392.4	85289.2
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	201.0	206.3	210.7	215.2	220.1	1053.3
Injection	26.8	26.8	26.8	26.8	26.6	133.9
Withdrawal	5.7	5.6	5.6	5.6	5.6	28.3
Total Fuel	233.5	238.8	243.2	247.7	252.4	1215.5
Storage Injections						
ENGLNG	240.7	241.4	241.6	241.4	241.2	1206.3
ENGPropane	134.5	144.5	152.0	160.5	160.8	752.3
ENGFSMA	1755.0	1756.5	1756.5	1756.5	1740.9	8765.5
ENGDominion	106.7	107.0	107.6	106.4	106.6	534.3
ENGNGF	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total Inj	3193.4	3199.1	3207.3	3213.4	3198.1	16011.3
Total Req	19209.8	19824.0	20510.4	21129.0	21842.8	102516.0
=====						
Sources of Supply						
ENGUSGC	2382.3	2407.8	2380.4	2375.6	2385.3	11931.4
ENGNiagara	1146.6	1146.6	1145.5	1144.3	1146.0	5729.0
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	65.4	75.4	82.9	91.4	91.7	406.9
ENG-Z4	6592.1	6624.5	6663.2	6665.0	6672.7	33217.6
Dracut 20	211.7	306.6	463.6	672.2	934.5	2588.6
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAWN	767.5	882.9	1012.7	1137.9	1250.5	5051.5
DAWN	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	992.2	992.2	992.2	992.2	992.2	4960.8
Dracut 30	3069.4	3384.8	3758.3	4032.9	4352.2	18597.6
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	16031.4	16624.8	17303.1	17915.6	18629.1	86504.1

231

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	241.3	241.4	241.6	241.4	241.2	1206.9
ENGPropane	134.5	144.5	152.0	160.5	160.8	752.3
ENGFSMA	1739.4	1756.5	1756.5	1756.5	1756.5	8765.5
ENGDominion	106.7	107.0	107.6	106.4	106.6	534.3
ENGNGFG	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total With	3178.4	3199.1	3207.3	3213.4	3213.7	16011.9
=====						
Total Supply	19209.8	19824.0	20510.4	21129.0	21842.8	102516.0
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGFG	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	12	12	12	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGFG	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2607	2607	2607	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	57488	Injection Cost	47	Transportation Cost	2304	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	158.31
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	158.31
Total Variable	57514	Total Variable	91	Total Variable	2304		
Demand/Reservation Co	11722	Demand Cost	695	Demand Cost	20861		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11817	Total Fixed	1669	Total Fixed	20861		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	69331	Net Storage Cost	1760	Net Trans Cost	23165	Total Gas Cost	94256
						Total Revenue	0
						Net Cost	94256

Avg Cost of Served Demand 5.524 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.995 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	17062.5	0.0	17062.5	0.0	17062.5	17062.5	0.0	0	158.3	0.0
Total	17062.5	0.0	17062.5	0.0	17062.5	17062.5	0.0	0	158.3	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2304.8	18250.0	15945.2			3.0171	6954	0	6954	3.0171
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	53.3	91.7	38.5			15.0000	799	0	799	15.0000
ENG-Z4	6579.6	6690.4	110.8			2.3200	15265	0	15265	2.3200
Dracut 20	693.5	7300.0	6606.5			4.6878	3251	0	3251	4.6878
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	711.7	2190.0	1478.3			3.2109	2285	0	2285	3.2109

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1641.5	3137.5	1495.9			3.1692	5202	0	5202	3.1692
Repsol 40	717.0	717.0	0.0							
Dracut 30	2700.5	10950.0	8249.5			5.6956	15381	0	15381	5.6956
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17352.7						57514	11817	69331	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	210.3	210.9	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	122.4	122.4	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1755.4	1721.0	0	18.8	1498	96	0.0	16	2573	3515	942
ENGDomion	103	100	108.9	106.8	0	2.1	103	100	0.0	0	178	244	66
ENGNGFG	671	100	698.3	692.8	0	5.5	671	100	5.5	0	1164	1593	429
ENGHON	246	100	243.6	243.6	0	0.0	246	100	0.0	0	427	553	126
Total	2592	97	3139.0	3097.5	0	26.4	2607	98	5.5	15	5426	6941	1515

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	2338.5	0.0	2338.5	7882.5	5544.0	0	5043	0	5043	2.1566
ENG TGP2Stg	64.1	1.3	62.8	7882.5	7819.8	16	0	0	16	0.2572
ENG TGPLong	6005.5	0.0	6005.5	8698.1	2692.6	0	0	0	0	0.0000
ENG TGPBND	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2758.8	23.4	2735.3	10262.0	7526.7	311	2688	0	2998	1.0869
TrCanCharges	703.6	8.1	695.5	1477.2	781.6	0	698	0	698	0.9914
IroqCharges	695.5	4.3	691.2	1460.0	768.8	62	640	0	701	1.0086
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	177.2	0.0	177.2	8654.9	8477.7	0	0	0	0	0.0000
ENGPropane	122.4	0.0	122.4	6335.0	6212.6	0	0	0	0	0.0000
ENG C3Truck	122.4	0.0	122.4	4380.0	4257.6	122	0	0	122	1.0000
Dracut 30	2522.8	5.3	2517.5	10950.0	8432.5	110	4388	0	4498	1.7829
UnionCharges	711.7	8.1	703.6	1477.2	773.6	0	140	0	140	0.1967
Dracut 20	875.8	1.8	874.0	7300.0	6426.0	38	1134	0	1172	1.3378

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2274.4	63.4	2211.0	9125.0	6914.0	677	0	0	677	0.2976
Z4toTGPLH	3827.0	32.5	3794.5	7665.0	3870.5	431	0	0	431	0.1126
Z4toStg	2752.6	9.1	2743.5	7882.5	5139.0	136	0	0	136	0.0495
Engie2CG	440.7	1.2	439.4	1057.0	617.6	15	0	0	15	0.0334
██████████	2282.2	4.8	2277.4	9329.8	7052.4	99	0	0	99	0.0434
Repsol2Drac	712.4	21.4	691.0	6308.2	5617.2	0	0	0	0	0.0000
██████████	4.7	0.1	4.5	15.9	11.4	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	189.3	0.0	189.3	1057.0	867.7	189	0	0	189	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1641.5	26.1	1615.4	3087.6	1472.1	0	3118	0	3118	1.8997
██████████	1615.4	24.2	1591.2	3041.3	1450.0	0	██████████	██████████	██████████	██████████
Total		243.2				2304	██████████	██████████	██████████	██████████

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	58244	Injection Cost	47	Transportation Cost	2356	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	164.10
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	164.10
Total Variable	58271	Total Variable	91	Total Variable	2356		
Demand/Reservation Co	11722	Demand Cost	695	Demand Cost	20861		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11817	Total Fixed	1669	Total Fixed	20861		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	70088	Net Storage Cost	1760	Net Trans Cost	23217	Total Gas Cost	95065
						Total Revenue	0
						Net Cost	95065

Avg Cost of Served Demand 5.367 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.895 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17711.9	0.0	17711.9	0.0	17711.9	17711.9	0.0	0	164.1	0.0	
Total	17711.9	0.0	17711.9	0.0	17711.9	17711.9	0.0	0	164.1	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2334.9	18250.0	15915.1			2.9094	6793	0	6793	2.9094
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	61.2	91.7	30.6			15.0000	918	0	918	15.0000
ENG-Z4	6627.5	6690.4	62.9			2.1144	14013	0	14013	2.1144
Dracut 20	804.6	7300.0	6495.4			5.0100	4031	0	4031	5.0100
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	738.6	2190.0	1451.4			2.9649	2190	0	2190	2.9649

APPENDIX 6.D.1 HIGH GROWTH DESIGN YEAR RESOURCE MIX

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 08:10:05

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1743.6	3137.5	1393.8			2.9177	5087	0	5087	2.9177
Repsol 40	717.0	717.0	0.0							
Dracut 30	3015.8	10950.0	7934.2			5.7416	17315	0	17315	5.7416
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	17994.0						58271	11817	70088	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	213.5	212.8	0	0.0	13	100	0.0	1	57	58	1
ENGPropane	77	100	130.3	130.3	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1755.0	1736.2	0	18.8	1498	96	0.0	0	3515	3140	-375
ENGDomion	103	100	108.7	106.6	0	2.1	103	100	0.0	0	244	221	-23
ENGNGFG	671	100	697.1	691.6	0	5.5	671	100	5.5	0	1593	1430	-163
ENGHON	246	100	246.1	246.1	0	0.0	246	100	0.0	0	553	517	-36
Total	2607	98	3150.6	3123.6	0	26.4	2608	98	5.5	1	6941	6345	-596

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TGPProd	2368.5	0.0	2368.5	7882.5	5514.0	0	5043	0	5043	2.1293	
ENG TGP2Stg	63.2	1.3	61.9	7882.5	7820.6	16	0	0	16	0.2572	
ENG TGPLong	6081.6	0.0	6081.6	8698.1	2616.5	0	0	0	0	0.0000	
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185	
ENG TGPShort	2775.0	23.6	2751.4	10262.0	7510.5	313	2688	0	3000	1.0812	
TrCanCharges	730.2	8.4	721.8	1477.2	755.3	0	698	0	698	0.9553	
IroqCharges	721.8	4.5	717.4	1460.0	742.6	64	640	0	704	0.9750	
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155	
ENGLNG	179.2	0.0	179.2	8654.9	8475.7	0	0	0	0	0.0000	
ENGPropane	130.3	0.0	130.3	6335.0	6204.7	0	0	0	0	0.0000	
ENG C3Truck	130.3	0.0	130.3	4380.0	4249.7	130	0	0	130	1.0000	
Dracut 30	2761.5	5.8	2755.7	10950.0	8194.3	120	4388	0	4508	1.6325	
UnionCharges	738.6	8.4	730.2	1477.2	746.9	0	140	0	140	0.1896	
Dracut 20	1063.4	2.2	1061.1	7300.0	6238.9	46	1134	0	1180	1.1095	

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2305.3	64.3	2241.1	9125.0	6883.9	686	0	0	686	0.2976
Z4toTGPH	3873.5	32.9	3840.5	7665.0	3824.5	436	0	0	436	0.1126
Z4toStg	2754.1	9.1	2745.0	7882.5	5137.6	136	0	0	136	0.0495
Engie2CG	437.5	1.2	436.3	1057.0	620.7	15	0	0	15	0.0334
	2381.3	5.0	2376.3	9329.8	6953.6	103	0	0	103	0.0434
	712.5	21.4	691.1	6308.2	5617.1	0	0	0	0	0.0000
Repsol2Drac	4.6	0.1	4.4	15.9	11.5	0	0	0	0	0.0000
	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	192.5	0.0	192.5	1057.0	864.5	192	0	0	192	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1743.6	27.7	1715.9	3087.6	1371.7	0	3118	0	3118	1.7885
	1715.9	25.7	1690.2	3041.3	1351.1	0				
Total		249.6				2356				

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	60388	Injection Cost	47	Transportation Cost	2400	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	169.45
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	169.45
Total Variable	60415	Total Variable	92	Total Variable	2400		
Demand/Reservation Co	11722	Demand Cost	695	Demand Cost	20861		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11817	Total Fixed	1669	Total Fixed	20861		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	72231	Net Storage Cost	1761	Net Trans Cost	23261	Total Gas Cost	97253
						Total Revenue	0
						Net Cost	97253

Avg Cost of Served Demand 5.266 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.851 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	18468.8	0.0	18468.8	0.0	18468.8	18468.8	0.0	0	169.4	0.0	
Total	18468.8	0.0	18468.8	0.0	18468.8	18468.8	0.0	0	169.4	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2334.9	18300.0	15965.1			2.7945	6525	0	6525	2.7945
ENGNiagara	1147.1	1170.5	23.4			2.1354	2449	0	2449	2.1354
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	66.1	91.7	25.6			15.0000	992	0	992	15.0000
ENG-Z4	6664.0	6698.7	34.7			1.9744	13158	0	13158	1.9744
Dracut 20	1047.8	7320.0	6272.2			5.2558	5507	0	5507	5.2558
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	761.2	2196.0	1434.8			2.8561	2174	0	2174	2.8561

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	1883.9	3146.1	1262.2			2.8096	5293	0	5293	2.8096
Repsol 40	717.0	717.0	0.0							
Dracut 30	3330.6	10980.0	7649.4			5.7336	19097	0	19097	5.7336
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	18757.2						60415	11817	72231	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	215.4	215.4	0	0.0	13	100	0.0	0	58	58	-0
ENGPropane	77	100	135.2	135.2	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1757.0	1738.2	0	18.8	1498	96	0.0	0	3140	2993	-147
ENGDomion	103	100	109.5	107.4	0	2.1	103	100	0.0	0	221	210	-10
ENGNGFG	671	100	704.3	698.8	0	5.6	671	100	5.5	0	1430	1361	-69
ENGHON	246	100	245.5	245.5	0	0.0	246	100	0.0	0	517	490	-27
Total	2608	98	3166.9	3140.4	0	26.5	2608	98	5.5	0	6345	6091	-254

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TGPProd	2368.3	0.0	2368.3	7904.1	5535.8	0	5043	0	5043	2.1295	
ENG TGP2Stg	73.1	1.5	71.6	7904.1	7832.5	19	0	0	19	0.2572	
ENG TGPLong	6108.2	0.0	6108.2	8719.7	2611.5	0	0	0	0	0.0000	
ENG TGPNBD	1147.1	7.1	1140.0	1142.7	2.7	98	267	0	365	0.3184	
ENG TGPShort	2784.3	23.7	2760.6	10290.1	7529.5	314	2688	0	3001	1.0779	
TrCanCharges	752.6	8.7	743.9	1481.2	737.3	0	698	0	698	0.9270	
IroqCharges	743.9	4.6	739.3	1464.0	724.7	66	640	0	706	0.9487	
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990	
ENGLNG	182.1	0.0	182.1	8678.6	8496.5	0	0	0	0	0.0000	
ENGPropane	135.2	0.0	135.2	6370.0	6234.8	0	0	0	0	0.0000	
ENG C3Truck	135.2	0.0	135.2	4392.0	4256.8	135	0	0	135	1.0000	
Dracut 30	3067.0	6.4	3060.6	10980.0	7919.4	133	4388	0	4521	1.4742	
UnionCharges	761.2	8.7	752.6	1481.2	728.6	0	140	0	140	0.1839	
Dracut 20	1315.6	2.8	1312.8	7320.0	6007.2	57	1134	0	1191	0.9051	

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Ventyx Page 9
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
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NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2295.2	64.0	2231.2	9150.0	6918.8	683	0	0	683	0.2976
Z4toTGPH	3910.2	33.2	3877.0	7686.0	3809.0	440	0	0	440	0.1126
Z4toStg	2753.8	9.1	2744.7	7904.1	5159.5	136	0	0	136	0.0495
Engie2CG	435.6	1.2	434.3	1064.0	629.7	15	0	0	15	0.0334
	2517.4	5.3	2512.1	9355.4	6843.2	109	0	0	109	0.0434
	712.7	21.4	691.3	6325.5	5634.2	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	16.0	11.8	0	0	0	0	0.0000
	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2928.0	2928.0	0	0	0	0	0.0000
Engie2ENGLNG	194.4	0.0	194.4	1064.0	869.6	194	0	0	194	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	1883.9	30.0	1853.9	3096.0	1242.1	0	3118	0	3118	1.6553
	1853.9	27.8	1826.1	3049.6	1223.5	0				
Total		256.3				2400				

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	64167	Injection Cost	47	Transportation Cost	2455	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	175.56
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	175.56
Total Variable	64195	Total Variable	93	Total Variable	2455		
Demand/Reservation Co	11722	Demand Cost	695	Demand Cost	20861		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11817	Total Fixed	1669	Total Fixed	20861		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	76011	Net Storage Cost	1762	Net Trans Cost	23315	Total Gas Cost	101088
						Total Revenue	0
						Net Cost	101088

Avg Cost of Served Demand 5.296 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.922 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	19088.2	0.0	19088.2	0.0	19088.2	19088.2	0.0	0	175.6	0.0
Total	19088.2	0.0	19088.2	0.0	19088.2	19088.2	0.0	0	175.6	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2334.5	18250.0	15915.5			2.8121	6565	0	6565	2.8121
ENGNiagara	1145.8	1167.3	21.5			2.1439	2457	0	2457	2.1439
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	83.8	91.7	8.0			15.0000	1257	0	1257	15.0000
ENG-Z4	6665.5	6690.4	24.9			1.9829	13217	0	13217	1.9829
Dracut 20	1304.7	7300.0	5995.3			5.3470	6976	0	6976	5.3470
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	768.1	2190.0	1421.9			2.8533	2192	0	2192	2.8533

242

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	2010.9	3137.5	1126.6			2.7950	5620	0	5620	2.7950
Repsol 40	717.0	717.0	0.0							
Dracut 30	3547.7	10950.0	7402.3			5.8390	20715	0	20715	5.8390
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	19382.1						64195	11817	76011	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	225.4	225.4	0	0.0	13	100	0.0	0	58	58	0
ENGPropane	77	100	152.9	152.9	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1758.0	1739.2	0	18.8	1498	96	0.0	0	2993	3018	25
ENGDomion	103	100	111.7	109.5	0	2.2	103	100	0.0	0	210	212	2
ENGNGFG	671	100	713.4	707.8	0	5.6	671	100	5.6	0	1361	1374	12
ENGHON	246	100	246.0	246.0	0	0.0	246	100	0.0	0	490	491	1
Total	2608	98	3207.4	3180.8	0	26.6	2608	98	5.6	0	6091	6130	40

Transportation Summary										
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2367.5	0.0	2367.5	7882.5	5515.0	0	5043	0	5043	2.1302
ENG TGP2Stg	87.3	1.8	85.5	7882.5	7797.1	22	0	0	22	0.2572
ENG TGPLong	6096.3	0.0	6096.3	8698.1	2601.8	0	0	0	0	0.0000
ENG TGPBND	1145.8	7.1	1138.7	1139.5	0.8	98	267	0	365	0.3187
ENG TGPShort	2796.9	23.8	2773.1	10262.0	7488.9	315	2688	0	3003	1.0736
TrCanCharges	759.4	8.7	750.6	1477.2	726.5	0	698	0	698	0.9186
IroqCharges	750.6	4.7	746.0	1460.0	714.0	67	640	0	706	0.9410
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	192.3	0.0	192.3	8654.9	8462.6	0	0	0	0	0.0000
ENGPropane	152.9	0.0	152.9	6335.0	6182.1	0	0	0	0	0.0000
ENG C3Truck	152.9	0.0	152.9	4380.0	4227.1	153	0	0	153	1.0000
Dracut 30	3234.7	6.8	3227.9	10950.0	7722.1	140	4388	0	4529	1.4001
UnionCharges	768.1	8.7	759.4	1477.2	717.8	0	140	0	140	0.1823
Dracut 20	1622.2	3.4	1618.8	7300.0	5681.2	70	1134	0	1204	0.7423

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2280.3	63.6	2216.7	9125.0	6908.3	679	0	0	679	0.2976
Z4toTGPLH	3912.8	33.3	3879.5	7665.0	3785.5	441	0	0	441	0.1126
Z4toStg	2752.7	9.1	2743.6	7882.5	5138.9	136	0	0	136	0.0495
Engie2CG	425.6	1.2	424.4	1057.0	632.6	14	0	0	14	0.0334
	2640.2	5.5	2634.7	9329.8	6695.1	115	0	0	115	0.0434
	712.4	21.4	691.0	6308.2	5617.2	0	0	0	0	0.0000
Repsol2Drac	4.7	0.1	4.5	15.9	11.4	0	0	0	0	0.0000
	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	204.4	0.0	204.4	1057.0	852.6	204	0	0	204	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	2010.9	32.0	1978.9	3087.6	1108.6	0	3118	0	3118	1.5508
	1978.9	29.7	1949.2	3041.3	1092.0	0				
Total		261.6				2455				

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	69831	Injection Cost	47	Transportation Cost	2509	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	182.50
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	182.50
Total Variable	69859	Total Variable	93	Total Variable	2509		
Demand/Reservation Co	11722	Demand Cost	695	Demand Cost	20861		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	11817	Total Fixed	1669	Total Fixed	20861		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	81676	Net Storage Cost	1761	Net Trans Cost	23370	Total Gas Cost	106807
						Total Revenue	0
						Net Cost	106807

Avg Cost of Served Demand 5.376 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.053 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	19867.9	0.0	19867.9	0.0	19867.9	19867.9	0.0	0	182.5	0.0
Total	19867.9	0.0	19867.9	0.0	19867.9	19867.9	0.0	0	182.5	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2346.7	18250.0	15903.3			2.8373	6658	0	6658	2.8373
ENGNiagara	1146.6	1167.3	20.6			2.1909	2512	0	2512	2.1909
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6673.2	6690.4	17.2			2.0467	13658	0	13658	2.0467
Dracut 20	1594.0	7300.0	5706.0			5.7503	9166	0	9166	5.7503
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	780.2	2190.0	1409.8			2.8746	2243	0	2243	2.8746

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	2132.5	3137.5	1004.9			2.8083	5989	0	5989	2.8083
Repsol 40	717.0	717.0	0.0							
Dracut 30	3865.3	10950.0	7084.7			5.9615	23043	0	23043	5.9615
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	20151.4						69859	11817	81676	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	234.3	235.0	0	0.0	12	95	0.0	-1	58	55	-2
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1739.9	1736.9	0	18.6	1482	95	0.0	-16	3018	3087	69
ENGDomion	103	100	111.2	109.0	0	2.2	103	100	0.0	0	212	218	6
ENGNGF	671	100	715.3	709.6	0	5.7	671	100	5.6	0	1374	1418	45
ENGHON	246	100	244.0	244.0	0	0.0	246	100	0.0	0	491	505	14
Total	2608	98	3205.6	3195.4	0	26.4	2591	97	5.6	-16	6130	6262	131

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	2379.7	0.0	2379.7	7882.5	5502.9	0	5043	0	5043	2.1193
ENGTP2Stg	86.1	1.8	84.3	7882.5	7798.2	22	0	0	22	0.2572
ENGTPLong	6134.3	0.0	6134.3	8698.1	2563.8	0	0	0	0	0.0000
ENGTPBND	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENGTPShort	2794.0	23.7	2770.2	10262.0	7491.8	315	2688	0	3002	1.0746
TrCanCharges	771.3	8.9	762.4	1477.2	714.7	0	698	0	698	0.9044
IroqCharges	762.4	4.7	757.7	1460.0	702.3	68	640	0	707	0.9278
ENGPNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	202.0	0.0	202.0	8654.9	8452.8	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3666.4	7.7	3658.7	10950.0	7291.3	159	4388	0	4547	1.2403
UnionCharges	780.2	8.9	771.3	1477.2	705.9	0	140	0	140	0.1795
Dracut 20	1797.3	3.8	1793.6	7300.0	5506.4	78	1134	0	1212	0.6742

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx Page 15
SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 (Continued) 08:10:05

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2293.6	63.9	2229.7	9125.0	6895.3	683	0	0	683	0.2976
Z4toTGPLH	3938.0	33.5	3904.6	7665.0	3760.4	444	0	0	444	0.1126
Z4toStg	2735.1	9.0	2726.1	7882.5	5156.5	135	0	0	135	0.0495
Engie2CG	416.7	1.2	415.5	1057.0	641.5	14	0	0	14	0.0334
	2758.2	5.8	2752.4	9329.8	6577.4	120	0	0	120	0.0434
	712.5	21.4	691.1	6308.2	5617.1	0	0	0	0	0.0000
Repsol2Drac	4.6	0.1	4.4	15.9	11.5	0	0	0	0	0.0000
	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	213.3	0.0	213.3	1057.0	843.7	213	0	0	213	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	2132.5	33.9	2098.6	3087.6	989.0	0	3118	0	3118	1.4623
	2098.6	31.5	2067.1	3041.3	974.1	0				
Total		267.7				2509				

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	310118	Injection Cost	235	Transportation Cost	12024	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	226	Other Variable Cost	0	System Served	182.50
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	182.50
Total Variable	310253	Total Variable	461	Total Variable	12024		
Demand/Reservation Co	58612	Demand Cost	3477	Demand Cost	104304		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	59084	Total Fixed	8343	Total Fixed	104304		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	369337	Net Storage Cost	8804	Net Trans Cost	116329	Total Gas Cost	494470
						Total Revenue	0
						Net Cost	494470

Avg Cost of Served Demand 5.363 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.944 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	92199.3	0.0	92199.3	0.0	92199.3	92199.3	0.0	0	182.5	0.0
Total	92199.3	0.0	92199.3	0.0	92199.3	92199.3	0.0	0	182.5	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11655.8	91300.0	79644.2			2.8737	33495	0	33495	2.8737
ENGNiagara	5732.8	5839.5	106.8			2.2006	12616	0	12616	2.2006
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	356.1	458.7	102.7			15.0000	5341	0	5341	15.0000
ENG-Z4	33209.8	33460.3	250.5			2.0871	69311	0	69311	2.0871
Dracut 20	5444.7	36520.0	31075.3			5.3138	28932	0	28932	5.3138
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DLiqSummer	105.0	105.0	0.0							
ENG Dawn	3759.9	10956.0	7196.1			2.9479	11084	0	11084	2.9479

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	9412.5	15695.9	6283.4			2.8889	27192	0	27192	2.8889
Repsol 40	3585.1	3585.1	0.0							
Dracut 30	16459.9	54780.0	38320.1			5.8051	95551	0	95551	5.8051
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	93637.3						310253	59084	369337	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1099.0	1099.6	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	701.5	701.5	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8765.3	8671.5	0	93.8	1482	95	0.0	0	2573	3087	514
ENGDomion	103	100	550.1	539.3	0	10.7	103	100	0.0	0	178	218	40
ENGNGFG	671	100	3528.4	3500.6	0	27.9	671	100	27.7	0	1164	1418	254
ENGHON	246	100	1225.2	1225.2	0	0.0	246	100	0.0	0	427	505	77
Total	2592	97	15869.5	15737.7	0	132.4	2591	97	27.7	-1	5426	6262	836

Transportation Summary										
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	11822.5	0.0	11822.5	39434.3	27611.7	0	25216	0	25216	2.1329
ENG TGP2Stg	373.7	7.6	366.1	39434.3	39068.2	96	0	0	96	0.2572
ENG TGPLong	30425.9	0.0	30425.9	43512.1	13086.2	0	0	0	0	0.0000
ENG TGPNBD	5732.8	35.5	5697.2	5700.8	3.5	489	1337	0	1826	0.3185
ENG TGPShort	13908.9	118.2	13790.7	51338.0	37547.3	1567	13438	0	15005	1.0788
TrCanCharges	3717.0	42.7	3674.3	7389.8	3715.5	0	3488	0	3488	0.9384
IroqCharges	3674.3	22.8	3651.5	7304.0	3652.5	326	3199	0	3525	0.9593
ENG PNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	932.8	0.0	932.8	43298.1	42365.3	0	0	0	0	0.0000
ENGPropane	701.5	0.0	701.5	31710.0	31008.5	0	0	0	0	0.0000
ENG C3Truck	701.5	0.0	701.5	21912.0	21210.5	702	0	0	702	1.0000
Dracut 30	15252.4	32.0	15220.4	54780.0	39559.6	662	21942	0	22604	1.4820
UnionCharges	3759.9	42.8	3717.0	7389.8	3672.8	0	700	0	700	0.1862
Dracut 20	6674.3	14.0	6660.3	36520.0	29859.7	290	5668	0	5958	0.8927

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	11448.8	319.1	11129.7	45650.0	34520.3	3407	0	0	3407	0.2976
Z4toTGPLH	19461.6	165.4	19296.2	38346.0	19049.8	2192	0	0	2192	0.1126
Z4toStg	13748.3	45.4	13702.9	39434.3	25731.4	681	0	0	681	0.0495
Engie2CG	2156.0	6.0	2150.0	5292.0	3142.0	72	0	0	72	0.0334
██████████	12579.4	26.4	12552.9	46674.7	34121.7	546	0	0	546	0.0434
██████████	3562.4	106.9	3455.5	31558.3	28102.8	0	0	0	0	0.0000
Repsol2Drac	22.8	0.7	22.1	79.5	57.5	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	14608.0	14608.0	0	0	0	0	0.0000
Engie2ENGLNG	994.0	0.0	994.0	5292.0	4298.0	994	0	0	994	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	9412.5	149.7	9262.8	15446.3	6183.5	0	15592	0	15592	1.6566
██████████	9262.8	138.9	9123.9	15214.6	6090.8	0	████████████████████	████████████████████	████████████████████	████████████████████
Total		1278.5				12024	████████████████████	████████████████████	████████████████████	████████████████████

RESOURCE MIX RESULTS

Units: MDT

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	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	8.60
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	17.93
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments		NOV 2017	OCT 2022	0.00	150.00	25.56
		NOV 2017	OCT 2022	0.00	150.00	17.28
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	8.46
		NOV 2017	OCT 2022	0.00	150.00	8.33

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1636.9	2732.2	3229.5	2787.1	2348.3	1352.3	709.7	424.9	321.9	320.3	405.3	794.2	17062.5
Total Demand	1636.9	2732.2	3229.5	2787.1	2348.3	1352.3	709.7	424.9	321.9	320.3	405.3	794.2	17062.5
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	32.1	37.0	45.3	41.5	32.0	18.0	8.2	4.9	4.3	4.3	4.8	10.8	243.2
Injection	2.9	0.0	0.0	0.0	0.0	0.8	2.4	4.1	5.0	5.1	4.2	2.0	26.4
Withdrawal	0.2	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Total Fuel	35.2	38.4	46.8	42.8	33.2	18.8	10.5	9.0	9.3	9.4	9.0	12.8	275.1
Storage Injections													
ENGLNG	2.9	31.2	45.8	69.4	40.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	210.3
ENGPropane	0.0	0.0	28.4	24.8	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	122.4
ENGFSMA	238.7	0.0	0.0	0.0	0.0	0.0	205.8	306.4	318.6	316.1	255.3	95.7	1736.6
ENGDominion	6.4	0.0	0.0	0.0	0.0	4.8	1.8	7.7	25.0	28.0	22.8	10.3	106.8
ENGNGF	22.0	0.0	0.0	0.0	0.0	90.8	13.6	73.3	135.1	137.5	123.4	97.0	692.8
ENGHON	30.1	0.0	0.0	0.0	0.0	14.7	12.6	39.0	39.3	41.3	40.0	26.7	243.6
Total Inj	300.1	31.2	74.2	94.3	40.0	110.3	252.4	440.8	529.5	534.5	461.8	243.5	3112.5
Total Req	1972.1	2801.7	3350.5	2924.2	2421.5	1481.4	972.6	874.7	860.8	864.1	876.1	1050.5	20450.2
=====													
Sources of Supply													
ENGUSGC	597.9	423.3	423.7	382.9	396.2	70.1	3.5	0.0	0.0	0.0	0.0	7.2	2304.8
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	28.4	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.3
ENG-Z4	249.0	257.3	257.3	232.4	257.3	742.2	787.6	759.7	745.6	748.9	754.8	787.6	6579.6
Dracut 20	71.3	255.7	178.4	24.7	150.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0	693.5
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGdawn	114.6	126.9	126.9	114.6	118.7	77.8	7.0	0.0	0.0	0.0	0.0	25.1	711.7
DAWN	251.0	266.5	266.5	240.7	249.3	206.9	50.6	0.0	0.0	0.0	0.0	110.1	1641.5
Repsol 40	0.0	87.8	304.4	304.7	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Dracut 30	360.8	474.3	568.2	544.4	485.7	267.1	0.0	0.0	0.0	0.0	0.0	0.0	2700.5
Engie Combo	2.9	160.4	175.6	193.3	97.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1750.1	2160.7	2438.8	2161.0	1882.2	1478.5	969.7	871.8	857.8	861.2	873.3	1047.5	17352.7

252

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	31.2	56.9	69.4	30.2	2.9	2.9	2.9	2.9	2.9	2.9	2.9	210.9
ENGPropane	0.0	0.0	97.5	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.4
ENGFSMA	160.7	357.8	478.6	427.4	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1721.0
ENGDominion	6.4	26.4	29.0	24.9	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.8
ENGNGF	22.0	167.7	189.0	163.2	150.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	692.8
ENGHON	30.1	57.9	60.7	53.4	41.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	243.6
Total With	222.0	641.0	911.7	763.2	539.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3097.5
=====													
Total Supply	1972.1	2801.7	3350.5	2924.2	2421.5	1481.4	972.6	874.7	860.8	864.1	876.1	1050.5	20450.2
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1203	724	297	0	0	206	512	831	1147	1402	1482
ENGDominion	103	103	76	47	22	2	7	9	17	42	70	92	103
ENGNGF	671	671	503	314	151	0	91	104	178	313	450	574	671
ENGHON	246	246	188	128	74	33	47	60	99	138	180	220	246
Total Inv	2592	2670	2060	1223	554	54	162	411	849	1376	1907	2366	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
Forecast Demand													
ENGIDesign	1695.6	2835.1	3342.4	2890.2	2433.9	1396.5	735.9	444.5	339.2	340.6	430.2	827.7	17711.9
Total Demand	1695.6	2835.1	3342.4	2890.2	2433.9	1396.5	735.9	444.5	339.2	340.6	430.2	827.7	17711.9
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	32.8	38.0	45.3	41.5	32.6	18.6	8.5	5.0	4.5	4.5	6.8	11.5	249.6
Injection	2.9	0.0	0.0	0.0	0.0	0.9	2.0	3.9	5.0	5.0	4.7	2.1	26.4
Withdrawal	0.2	1.4	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Total Fuel	35.8	39.3	46.8	42.8	33.8	19.5	10.5	9.0	9.4	9.5	11.4	13.6	281.5
Storage Injections													
ENGLNG	3.5	34.4	52.6	66.9	35.0	0.0	6.5	2.9	0.0	0.0	8.7	2.9	213.5
ENGPropane	0.0	0.0	31.7	29.5	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	130.3
ENGFSMA	238.3	0.0	0.0	0.0	0.0	0.0	116.0	290.7	319.0	318.0	299.2	155.0	1736.2
ENGDominion	5.6	0.0	0.0	0.0	0.0	9.1	5.8	10.5	23.2	24.9	21.9	5.5	106.6
ENGNGF	20.8	0.0	0.0	0.0	0.0	88.2	74.2	74.1	136.1	136.1	124.0	38.0	691.6
ENGHON	31.4	0.0	0.0	0.0	0.0	30.7	21.2	32.6	32.7	37.7	40.0	19.9	246.1
Total Inj	299.6	34.4	84.3	96.4	35.0	128.0	235.3	422.2	522.5	528.2	505.4	232.9	3124.2
Total Req	2031.0	2908.9	3473.5	3029.4	2502.7	1544.1	981.6	875.7	871.2	878.2	947.1	1074.2	21117.6
Sources of Supply													
ENGUSGC	600.3	423.3	423.8	382.9	409.6	75.7	4.4	0.0	0.0	0.0	0.0	14.9	2334.9
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	31.7	29.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.2
ENG-Z4	249.0	257.3	257.3	232.4	257.3	760.7	787.6	760.7	756.0	763.0	758.7	787.6	6627.5
Dracut 20	68.5	264.8	242.5	57.5	149.9	21.4	0.0	0.0	0.0	0.0	0.0	0.0	804.6
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.9	0.0	0.0	8.7	2.9	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	80.8	10.0	0.0	0.0	0.0	0.0	33.8	738.6
DAWN	257.9	266.5	266.5	240.7	257.9	214.7	55.8	0.0	0.0	0.0	67.0	116.7	1743.6
Repsol 40	0.0	100.9	300.5	302.8	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Dracut 30	390.0	503.1	629.6	637.1	568.4	286.8	0.5	0.0	0.0	0.0	0.0	0.2	3015.8
Engie Combo	3.5	160.0	175.6	190.8	100.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1794.5	2211.2	2563.9	2286.7	1986.0	1541.2	978.7	872.8	868.2	875.3	944.2	1071.3	17994.0

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	34.4	63.7	66.9	24.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	212.8
ENGPropane	0.0	0.0	100.8	29.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	130.3
ENGFSMA	175.9	402.4	466.5	410.5	281.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1736.2
ENGDominion	5.6	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.6
ENGNGF	20.8	173.0	189.0	158.5	150.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	691.6
ENGHON	31.4	59.9	60.7	53.2	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	246.1
Total With	236.5	697.7	909.7	742.7	516.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3123.6
=====													
Total Supply	2031.0	2908.9	3473.5	3029.4	2502.7	1544.1	981.6	875.7	871.2	878.2	947.1	1074.2	21117.6
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	10	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1158	692	281	0	0	116	407	726	1044	1343	1498
ENGDominion	103	103	75	46	22	2	11	17	27	50	75	97	103
ENGNGF	671	671	498	309	150	0	88	162	237	373	509	633	671
ENGHON	246	246	186	126	73	32	62	83	116	149	186	226	246
Total Inv	2607	2670	2007	1181	535	53	179	411	830	1350	1875	2378	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Forecast Demand													
ENGIDesign	1761.8	2924.2	3446.9	3082.8	2508.6	1449.1	766.5	467.1	358.6	364.5	457.9	880.7	18468.8
Total Demand	1761.8	2924.2	3446.9	3082.8	2508.6	1449.1	766.5	467.1	358.6	364.5	457.9	880.7	18468.8
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	33.2	37.8	46.0	42.5	32.6	19.2	13.7	5.1	4.6	4.7	5.1	11.9	256.3
Injection	2.9	0.0	0.0	0.0	0.0	0.9	3.5	3.6	5.0	4.9	3.8	1.9	26.5
Withdrawal	0.2	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Total Fuel	36.4	39.2	47.5	43.8	33.6	20.1	17.3	8.7	9.6	9.5	8.8	13.8	288.3
Storage Injections													
ENGLNG	2.9	45.1	48.5	66.9	31.0	0.0	6.5	2.9	2.9	0.0	5.8	2.9	215.4
ENGPropane	0.0	0.0	32.7	33.5	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	135.2
ENGFSMA	240.2	0.0	0.0	0.0	0.0	0.0	235.8	239.8	319.0	319.0	243.4	140.9	1738.2
ENGDominion	6.4	0.0	0.0	0.0	0.0	10.5	11.9	11.0	25.6	22.0	16.4	3.7	107.4
ENGNGF	28.0	0.0	0.0	0.0	0.0	82.9	95.3	98.2	128.8	125.3	99.5	40.7	698.8
ENGHON	30.8	0.0	0.0	0.0	0.0	34.7	22.8	37.3	26.6	39.3	36.0	18.1	245.5
Total Inj	308.2	45.1	81.2	100.4	31.0	128.0	383.8	400.7	514.5	517.2	412.6	217.7	3140.4
Total Req	2106.4	3008.6	3575.6	3227.0	2573.2	1597.2	1167.5	876.5	882.7	891.2	879.4	1112.3	21897.6
=====													
Sources of Supply													
ENGUSGC	610.0	423.3	424.1	396.7	396.0	79.9	5.1	0.0	0.0	0.0	0.0	0.0	2334.9
ENGNiagara	94.2	97.4	97.4	91.1	97.4	93.5	97.4	93.5	97.4	97.4	93.0	97.4	1147.1
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	32.7	33.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.1
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.2	787.6	762.2	764.5	776.0	762.2	787.6	6664.0
Dracut 20	96.0	299.3	302.4	102.2	211.4	36.5	0.0	0.0	0.0	0.0	0.0	0.0	1047.8
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.9	2.9	0.0	5.8	2.9	21.0
ENG Dawn	122.8	126.9	126.9	118.7	122.8	84.2	15.2	0.0	0.0	0.0	0.0	43.7	761.2
DAWN	257.9	266.5	266.5	249.3	257.9	223.1	234.1	0.0	0.0	0.0	0.0	128.6	1883.9
Repsol 40	0.0	89.8	317.1	288.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Dracut 30	419.5	564.9	667.3	728.6	608.7	308.2	2.3	0.0	0.0	0.0	0.0	31.3	3330.6
Engie Combo	2.9	161.4	172.4	188.1	105.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1860.6	2297.9	2676.1	2447.5	2088.6	1594.4	1164.6	873.7	879.7	888.3	876.5	1109.3	18757.2

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

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Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	45.1	59.6	66.9	20.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	215.4
ENGPropane	0.0	0.0	101.7	33.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	135.2
ENGFSMA	177.8	400.0	459.4	435.4	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1738.2
ENGDominion	6.4	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.4
ENGNGFG	28.0	178.8	189.0	164.6	138.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	698.8
ENGHON	30.8	58.7	60.7	55.0	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	245.5
Total With	245.8	710.7	899.5	779.5	484.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3140.4
Total Supply	2106.4	3008.6	3575.6	3227.0	2573.2	1597.2	1167.5	876.5	882.7	891.2	879.4	1112.3	21897.6
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGFG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	10	13	13	13	10	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1160	701	266	0	0	236	476	795	1114	1357	1498
ENGDominion	103	103	75	46	22	2	12	24	35	61	83	99	103
ENGNGFG	671	671	492	303	138	0	83	178	276	405	531	630	671
ENGHON	246	246	188	127	72	32	66	89	126	153	192	228	246
Total Inv	2608	2670	2004	1186	507	53	179	559	957	1469	1983	2393	2608
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Report 13 08:10:05

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	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1837.9	3037.4	3566.2	3080.6	2594.9	1505.3	798.1	488.9	377.3	385.7	486.8	929.2	19088.2
Total Demand	1837.9	3037.4	3566.2	3080.6	2594.9	1505.3	798.1	488.9	377.3	385.7	486.8	929.2	19088.2
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	33.5	38.9	46.5	40.2	33.0	19.8	14.7	6.7	5.8	4.8	5.3	12.5	261.6
Injection	3.1	0.0	0.0	0.0	0.0	0.8	3.6	3.9	5.1	4.8	3.5	1.9	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	36.9	40.4	48.0	41.4	34.1	20.6	18.3	10.7	10.9	9.5	8.7	14.3	293.9
Storage Injections													
ENGLNG	2.9	49.2	48.3	66.9	37.1	0.0	6.5	2.9	2.9	2.9	2.9	2.9	225.4
ENGPropane	0.0	0.0	49.2	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	152.9
ENGFSMA	241.2	0.0	0.0	0.0	0.0	0.0	253.4	242.1	319.0	306.2	239.3	138.0	1739.2
ENGDominion	9.2	0.0	0.0	0.0	0.0	7.5	10.1	17.5	28.3	20.5	11.9	4.6	109.5
ENGNGF	37.0	0.0	0.0	0.0	0.0	84.5	79.2	120.9	137.5	131.8	80.2	36.7	707.8
ENGHON	32.3	0.0	0.0	0.0	0.0	36.0	21.3	36.0	41.3	30.1	37.0	12.0	246.0
Total Inj	322.5	49.2	97.5	101.5	37.1	128.0	382.1	430.9	540.7	502.9	382.7	205.7	3180.8
Total Req	2197.3	3127.0	3711.8	3223.5	2666.0	1653.9	1198.4	930.4	928.9	898.2	878.2	1149.2	22562.8
=====													
Sources of Supply													
ENGUSGC	616.1	423.3	424.3	382.9	396.0	83.9	7.9	0.0	0.0	0.0	0.0	0.0	2334.5
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.0	97.4	97.4	93.6	97.4	1145.8
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	49.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	83.8
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	770.3	780.0	762.2	787.6	6665.5
Dracut 20	156.2	312.1	333.3	201.3	246.5	55.3	0.0	0.0	0.0	0.0	0.0	0.0	1304.7
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.9	2.9	2.9	2.9	2.9	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	87.1	18.7	0.0	0.0	0.0	0.0	48.3	768.1
DAWN	257.9	266.5	266.5	240.7	257.9	231.3	256.9	53.4	40.4	0.0	1.1	138.4	2010.9
Repsol 40	0.0	107.7	325.6	251.0	32.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Dracut 30	429.8	593.7	714.6	773.8	647.6	330.2	4.0	0.0	0.0	0.0	0.0	53.8	3547.7
Engie Combo	2.9	157.7	175.2	174.1	120.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1937.2	2353.6	2782.4	2503.8	2188.1	1651.0	1195.4	927.6	925.9	895.2	875.4	1146.3	19382.1

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	51.5	57.1	66.9	26.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	225.4
ENGPropane	0.0	0.0	118.3	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.9
ENGFSMA	178.8	449.9	475.3	385.2	250.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1739.2
ENGDominion	9.2	28.2	29.0	23.1	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.5
ENGNGF	37.0	183.1	189.0	158.5	140.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	707.8
ENGHON	32.3	60.7	60.7	51.3	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	246.0
Total With	260.1	773.4	929.3	719.6	478.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3180.8
Total Supply	2197.3	3127.0	3711.8	3223.5	2666.0	1653.9	1198.4	930.4	928.9	898.2	878.2	1149.2	22562.8
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	11	2	2	12	10	13	13	13	13	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1110	635	250	0	0	253	495	815	1121	1360	1498
ENGDominion	103	103	74	46	22	2	10	20	37	66	86	98	103
ENGNGF	671	671	488	299	140	0	84	164	285	422	554	634	671
ENGHON	246	246	186	125	74	33	69	90	126	167	197	234	246
Total Inv	2608	2670	1946	1114	496	55	180	559	987	1525	2025	2405	2608
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1916.4	3155.4	3701.2	3196.2	2692.5	1565.3	831.2	511.5	395.6	407.3	514.9	980.3	19867.9
Total Demand	1916.4	3155.4	3701.2	3196.2	2692.5	1565.3	831.2	511.5	395.6	407.3	514.9	980.3	19867.9
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	33.8	40.0	45.6	40.2	33.7	20.3	15.1	9.2	6.3	4.9	5.5	13.1	267.7
Injection	3.1	0.0	0.0	0.0	0.0	0.8	3.3	4.6	5.1	4.7	3.3	1.7	26.4
Withdrawal	0.3	1.5	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	37.2	41.5	47.1	41.5	34.7	21.1	18.4	13.7	11.4	9.6	8.7	14.8	299.7
Storage Injections													
ENGLNG	2.9	49.9	51.8	66.9	41.9	0.0	7.1	2.9	2.9	2.9	2.9	2.3	234.3
ENGPropane	0.0	0.0	61.7	30.1	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	238.9	0.0	0.0	0.0	0.0	0.0	192.6	284.2	319.0	316.0	248.1	122.4	1721.3
ENGDominion	9.2	0.0	0.0	0.0	0.0	3.5	18.3	22.8	28.3	13.5	8.7	4.6	109.0
ENGNGF	38.8	0.0	0.0	0.0	0.0	91.6	105.4	128.6	137.5	121.4	53.5	32.7	709.6
ENGHON	31.6	0.0	0.0	0.0	0.0	31.9	28.0	39.5	41.3	18.5	32.0	21.2	244.0
Total Inj	321.4	49.9	113.5	97.0	41.9	127.1	363.0	489.5	540.7	483.9	356.7	194.7	3179.1
Total Req	2274.9	3246.8	3861.8	3334.7	2769.1	1713.5	1212.6	1014.8	947.7	900.7	880.4	1189.7	23346.8
=====													
Sources of Supply													
ENGUSGC	620.1	423.3	424.4	382.9	396.0	87.8	12.2	0.0	0.0	0.0	0.0	0.0	2346.7
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	61.7	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	775.4	782.6	762.2	787.6	6673.2
Dracut 20	176.3	327.0	404.1	313.8	295.5	77.3	0.0	0.0	0.0	0.0	0.0	0.0	1594.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	90.3	23.1	0.0	0.0	0.0	0.0	52.7	780.2
DAWN	257.9	266.5	266.5	240.7	257.9	238.9	259.9	137.5	54.2	0.0	2.7	150.0	2132.5
Repsol 40	0.0	130.9	282.4	249.9	53.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	717.0
Dracut 30	484.5	646.8	788.6	811.3	696.1	353.0	5.9	0.0	0.0	0.0	0.0	79.1	3865.3
Engie Combo	2.9	165.0	176.9	167.1	118.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	2016.0	2452.1	2898.3	2641.3	2304.6	1710.6	1209.7	1011.9	944.8	897.8	877.5	1186.8	20151.4

260

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	54.1	58.7	66.9	32.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	235.0
ENGPropane	0.0	0.0	130.8	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	176.5	465.5	496.7	364.9	233.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1736.9
ENGDominion	9.2	28.2	28.0	23.2	20.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.0
ENGNGF	38.8	186.3	188.7	158.5	137.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	709.6
ENGHON	31.6	60.7	60.5	49.8	41.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	244.0
Total With	259.0	794.8	963.4	693.4	464.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3195.4
Total Supply	2274.9	3246.8	3861.8	3334.7	2769.1	1713.5	1212.6	1014.8	947.7	900.7	880.4	1189.7	23346.8
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	9	2	2	12	9	13	13	13	13	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1095	598	233	0	0	193	477	796	1112	1360	1498
ENGDominion	103	103	74	46	23	3	6	25	48	76	89	98	103
ENGNGF	671	671	485	296	137	0	92	197	326	463	585	638	671
ENGHON	246	246	186	125	75	34	66	94	133	175	193	225	246
Total Inv	2608	2670	1925	1075	479	56	180	540	1027	1565	2046	2400	2608
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	17062.5	17711.9	18468.8	19088.2	19867.9	92199.3
Total Demand	17062.5	17711.9	18468.8	19088.2	19867.9	92199.3
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	243.2	249.6	256.3	261.6	267.7	1278.5
Injection	26.4	26.4	26.5	26.6	26.4	132.4
Withdrawal	5.5	5.5	5.5	5.6	5.6	27.7
Total Fuel	275.1	281.5	288.3	293.9	299.7	1438.5
Storage Injections						
ENGLNG	210.3	213.5	215.4	225.4	234.3	1099.0
ENGPropane	122.4	130.3	135.2	152.9	160.8	701.5
ENGFSMA	1736.6	1736.2	1738.2	1739.2	1721.3	8671.5
ENGDominion	106.8	106.6	107.4	109.5	109.0	539.3
ENGNGF	692.8	691.6	698.8	707.8	709.6	3500.6
ENGHON	243.6	246.1	245.5	246.0	244.0	1225.2
Total Inj	3112.5	3124.2	3140.4	3180.8	3179.1	15737.1
Total Req	20450.2	21117.6	21897.6	22562.8	23346.8	109375.0
=====						
Sources of Supply						
ENGUSGC	2304.8	2334.9	2334.9	2334.5	2346.7	11655.8
ENGNiagara	1146.6	1146.6	1147.1	1145.8	1146.6	5732.8
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	53.3	61.2	66.1	83.8	91.7	356.1
ENG-Z4	6579.6	6627.5	6664.0	6665.5	6673.2	33209.8
Dracut 20	693.5	804.6	1047.8	1304.7	1594.0	5444.7
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAWN	711.7	738.6	761.2	768.1	780.2	3759.9
DAWN	1641.5	1743.6	1883.9	2010.9	2132.5	9412.5
Repsol 40	717.0	717.0	717.0	717.0	717.0	3585.1
Dracut 30	2700.5	3015.8	3330.6	3547.7	3865.3	16459.9
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	17352.7	17994.0	18757.2	19382.1	20151.4	93637.3

262

APPENDIX 6.D.2 HIGH GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1331 Design Case High Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:10:05

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	210.9	212.8	215.4	225.4	235.0	1099.6
ENGPropane	122.4	130.3	135.2	152.9	160.8	701.5
ENGFSMA	1721.0	1736.2	1738.2	1739.2	1736.9	8671.5
ENGDominion	106.8	106.6	107.4	109.5	109.0	539.3
ENGNGF	692.8	691.6	698.8	707.8	709.6	3500.6
ENGHON	243.6	246.1	245.5	246.0	244.0	1225.2
Total With	3097.5	3123.6	3140.4	3180.8	3195.4	15737.7
=====						
Total Supply	20450.2	21117.6	21897.6	22562.8	23346.8	109375.0
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	13	13	13	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGF	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2608	2608	2608	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

Peak Subperiod Demand Forecast by Class

JAN 19, 2018		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	158.3		
ThirtyDay			
TOTAL	158.3		

Peak Subperiod Demand Summary

JAN 19, 2018

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	158.3	158.3	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	158.3	158.3	0.0

JAN 19, 2018

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	158.3		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60					ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			957	61	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			59	57	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		387	58	ENGTGPShort	28.11	0.24
			Dracut 20		ENGHON		1.96			151	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	8.60								ENGPropane	34.60	
			Repsol 40	17.93								ENG3Truck	6.00	
			Dracut 30	22.82								Dracut 30	22.88	0.05
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20		
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													25.56	0.05
													17.28	0.53
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	8.46	0.14
													8.33	0.13
Total	158.3		Total	92.02	Total		68.10	0.05		1556		Total		1.76

Peak Subperiod Demand Forecast by Class

JAN 19, 2019		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	164.1		
ThirtyDay			
TOTAL	164.1		

Peak Subperiod Demand Summary

JAN 19, 2019

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	164.1	164.1	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	164.1	164.1	0.0

JAN 19, 2019			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	164.1		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPProd	13.75	
			ENGniagara	3.14	ENGPropane		28.60					ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			925	59	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		382	57	ENGTGPShort	28.11	0.24
			Dracut 20		ENGHON		1.96			149	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	8.60								ENGPropane	34.60	
			Repsol 40	17.93								ENG3Truck	6.00	
			Dracut 30	28.62								Dracut 30	28.66	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20		
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													25.56	0.05
													17.28	0.53
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	8.46	0.14
													8.33	0.13
Total	164.1		Total	97.82	Total		68.10	0.05		1515		Total		1.77

Peak Subperiod Demand Forecast by Class

JAN 19, 2020

Daily System Activity

Units: MDT

=====	
AREA	ENGIDesign
ENGIDemand	169.4
ThirtyDay	
TOTAL	169.4

Peak Subperiod Demand Summary

JAN 19, 2020

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	169.4	169.4	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	169.4	169.4	0.0

JAN 19, 2020

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	169.4		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			5	6	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			934	60	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		376	56	ENGTGPShort	28.11	0.24
			Dracut 20	3.98	ENGHON		1.96			150	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	8.60								ENGPropane	34.60	
			Repsol 40	17.93								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	4.01	0.01
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													25.56	0.05
													17.28	0.53
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	8.46	0.14
													8.33	0.13
Total	169.4		Total	103.1	Total		68.10	0.05		1524		Total		1.78

Peak Subperiod Demand Forecast by Class

JAN 19, 2021		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	175.6		
ThirtyDay			
TOTAL	175.6		

Peak Subperiod Demand Summary

JAN 19, 2021

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	175.6	175.6	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	175.6	175.6	0.0

JAN 19, 2021

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	175.5		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			12	16	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			868	56	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		372	55	ENGTGPShort	28.11	0.24
			Dracut 20	10.11	ENGHON		1.96			148	60	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	8.60								ENGPropane	34.60	
			Repsol 40	17.93								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	10.13	0.02
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													25.56	0.05
													17.28	0.53
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	8.46	0.14
													8.33	0.13
Total	175.5		Total	109.3	Total		68.10	0.05		1459		Total		1.80

Peak Subperiod Demand Forecast by Class

JAN 19, 2022

Daily System Activity

Units: MDT

=====	
AREA	ENGIDesign
ENGIDemand	182.5
ThirtyDay	
TOTAL	182.5

Peak Subperiod Demand Summary

JAN 19, 2022

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	182.5	182.5	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	182.5	182.5	0.0

JAN 19, 2022

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	182.5		ENGUSGC	13.75	ENGLNG		8.16			5	38	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			21	27	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			831	53	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			58	56	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		369	55	ENGTGPShort	28.11	0.24
			Dracut 20	20.00	ENGHON		1.96			149	60	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	8.16	
			DAWN	8.60								ENGPropane	34.60	
			Repsol 40	17.93								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	20.00	0.04
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													25.56	0.05
													17.28	0.53
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	8.46	0.14
													8.33	0.13
Total	182.5		Total	119.2	Total		65.16	0.05		1432		Total		1.82

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	57331	Injection Cost	48	Transportation Cost	2312	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	155.33
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	155.33
Total Variable	57358	Total Variable	94	Total Variable	2312		
Demand/Reservation Co	7777	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7871	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	65229	Net Storage Cost	1762	Net Trans Cost	17622	Total Gas Cost	84614
						Total Revenue	0
						Net Cost	84614

Avg Cost of Served Demand 5.464 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.151 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	15485.3	0.0	15485.3	0.0	15485.3	15485.3	0.0	0	155.3	0.0
Total	15485.3	0.0	15485.3	0.0	15485.3	15485.3	0.0	0	155.3	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2374.7	18250.0	15875.3			3.0113	7151	0	7151	3.0113
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6547.9	6690.4	142.5			2.3201	15192	0	15192	2.3201
Dracut 20	225.7	7300.0	7074.3			7.8552	1773	0	1773	7.8552
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	760.6	2190.0	1429.4			3.1719	2412	0	2412	3.1719

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	352.2	352.2	0.0							
Dracut 30	3409.8	10950.0	7540.2			6.5083	22192	0	22192	6.5083
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	15713.3						57358	7871	65229	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	240.9	241.5	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1774.0	1739.4	0	19.0	1498	96	0.0	16	2573	3509	936
ENGDominion	103	100	108.8	106.7	0	2.1	103	100	0.0	0	178	242	64
ENGNGFG	671	100	725.3	719.6	0	5.7	671	100	5.7	0	1164	1599	434
ENGHON	246	100	236.9	236.9	0	0.0	246	100	0.0	0	427	552	125
Total	2592	97	3246.7	3204.9	0	26.8	2607	98	5.7	15	5426	6937	1512

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	2374.7	0.0	2374.7	7882.5	5507.8	0	5043	0	5043	2.1237
ENG TGP2Stg	107.8	2.2	105.6	7882.5	7777.0	28	0	0	28	0.2572
ENG TGPLong	5970.8	0.0	5970.8	8698.1	2727.3	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2796.9	23.8	2773.1	10262.0	7488.9	315	2688	0	3003	1.0736
TrCanCharges	751.9	8.6	743.2	1477.2	733.9	0	698	0	698	0.9278
IroqCharges	743.2	4.6	738.6	1460.0	721.4	66	640	0	706	0.9495
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.5	0.0	241.5	8654.9	8413.4	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	2958.3	6.2	2952.1	10950.0	7997.9	128	4388	0	4517	1.5268
UnionCharges	760.6	8.7	751.9	1477.2	725.3	0	140	0	140	0.1841
Dracut 20	681.6	1.4	680.1	7300.0	6619.9	30	1134	0	1163	1.7068

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2266.9	63.2	2203.7	9125.0	6921.3	675	0	0	675	0.2976
Z4toTGPH	3799.4	32.3	3767.1	7665.0	3897.9	428	0	0	428	0.1126
Z4toStg	2748.5	9.1	2739.4	7882.5	5143.1	136	0	0	136	0.0495
Engie2CG	410.1	1.1	409.0	1057.0	648.0	14	0	0	14	0.0334
██████████	337.3	0.7	336.6	3072.2	2735.6	15	0	0	15	0.0434
██████████	347.7	10.4	337.3	3078.7	2741.4	0	0	0	0	0.0000
Repsol2Drac	4.4	0.1	4.3	15.9	11.6	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	219.9	0.0	219.9	1057.0	837.1	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		180.5				2312	15309		17622	0.6061

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	56411	Injection Cost	48	Transportation Cost	2336	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	157.91
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	157.91
Total Variable	56437	Total Variable	94	Total Variable	2336		
Demand/Reservation Co	7777	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7871	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	64309	Net Storage Cost	1762	Net Trans Cost	17645	Total Gas Cost	83716
						Total Revenue	0
						Net Cost	83716

Avg Cost of Served Demand 5.309 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.024 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	15767.4	0.0	15767.4	0.0	15767.4	15767.4	0.0	0	157.9	0.0
Total	15767.4	0.0	15767.4	0.0	15767.4	15767.4	0.0	0	157.9	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2390.7	18250.0	15859.3			2.9039	6942	0	6942	2.9039
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6604.0	6690.4	86.4			2.1147	13966	0	13966	2.1147
Dracut 20	272.0	7300.0	7028.0			7.9203	2154	0	2154	7.9203
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	796.6	2190.0	1393.4			2.9339	2337	0	2337	2.9339

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	352.2	352.2	0.0							
Dracut 30	3524.8	10950.0	7425.2			6.4651	22788	0	22788	6.4651
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	15982.7						56437	7871	64309	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.5	241.5	0	0.0	12	95	0.0	0	57	55	-2
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3509	3140	-369
ENGDominion	103	100	109.1	107.0	0	2.1	103	100	0.0	0	242	221	-21
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1599	1435	-163
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	552	518	-34
Total	2607	98	3242.4	3215.5	0	26.8	2607	98	5.6	0	6937	6349	-589

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPPProd	2390.7	0.0	2390.7	7882.5	5491.9	0	5043	0	5043	2.1095
ENG TGP2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6047.0	0.0	6047.0	8698.1	2651.1	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2807.6	23.9	2783.7	10262.0	7478.3	316	2688	0	3004	1.0699
TrCanCharges	787.6	9.1	778.5	1477.2	698.7	0	698	0	698	0.8858
IroqCharges	778.5	4.8	773.7	1460.0	686.3	69	640	0	709	0.9105
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.5	0.0	241.5	8654.9	8413.4	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3040.8	6.4	3034.5	10950.0	7915.5	132	4388	0	4520	1.4865
UnionCharges	796.6	9.1	787.6	1477.2	689.6	0	140	0	140	0.1758
Dracut 20	760.2	1.6	758.6	7300.0	6541.4	33	1134	0	1167	1.5346

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2284.3	63.7	2220.7	9125.0	6904.3	680	0	0	680	0.2976
Z4toTGPH	3859.1	32.8	3826.3	7665.0	3838.7	435	0	0	435	0.1126
Z4toStg	2744.9	9.1	2735.9	7882.5	5146.7	136	0	0	136	0.0495
Engie2CG	409.5	1.1	408.4	1057.0	648.6	14	0	0	14	0.0334
██████████	337.3	0.7	336.6	3072.2	2735.6	15	0	0	15	0.0434
██████████	347.7	10.4	337.3	3078.7	2741.4	0	0	0	0	0.0000
Repsol2Drac	4.4	0.1	4.3	15.9	11.6	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.5	0.0	220.5	1057.0	836.5	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		182.9				2336	15309		17645	0.5978

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	56040	Injection Cost	48	Transportation Cost	2350	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	159.92
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	159.92
Total Variable	56067	Total Variable	94	Total Variable	2350		
Demand/Reservation Co	7777	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7871	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	63938	Net Storage Cost	1762	Net Trans Cost	17660	Total Gas Cost	83361
						Total Revenue	0
						Net Cost	83361

Avg Cost of Served Demand 5.178 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.918 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	16100.4	0.0	16100.4	0.0	16100.4	16100.4	0.0	0	159.9	0.0	
Total	16100.4	0.0	16100.4	0.0	16100.4	16100.4	0.0	0	159.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2368.2	18300.0	15931.8			2.7917	6611	0	6611	2.7917
ENGNiagara	1141.4	1170.5	29.1			2.1359	2438	0	2438	2.1359
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6642.9	6698.7	55.8			1.9746	13117	0	13117	1.9746
Dracut 20	328.0	7320.0	6992.0			7.7627	2546	0	2546	7.7627
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	873.5	2196.0	1322.5			2.8158	2460	0	2460	2.8158

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	352.2	352.2	0.0							
Dracut 30	3715.9	10980.0	7264.1			6.2667	23286	0	23286	6.2667
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	16318.2						56067	7871	63938	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.5	241.5	0	0.0	12	95	0.0	0	55	54	-0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	3140	2991	-149
ENGDominion	103	100	109.7	107.6	0	2.1	103	100	0.0	0	221	210	-11
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1435	1364	-71
ENGHON	246	100	234.5	234.5	0	0.0	246	100	0.0	0	518	491	-27
Total	2607	98	3243.0	3216.1	0	26.8	2607	98	5.6	0	6349	6090	-259

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TGPProd	2368.2	0.0	2368.2	7904.1	5535.9	0	5043	0	5043	2.1296	
ENG TGP2Stg	106.4	2.2	104.2	7904.1	7800.0	27	0	0	27	0.2572	
ENG TGPLong	6063.1	0.0	6063.1	8719.7	2656.6	0	0	0	0	0.0000	
ENG TGPNBD	1141.4	7.1	1134.3	1142.7	8.3	97	267	0	365	0.3196	
ENG TGPShort	2808.2	23.9	2784.3	10290.1	7505.8	316	2688	0	3004	1.0697	
TrCanCharges	863.5	9.9	853.6	1481.2	627.6	0	698	0	698	0.8078	
IroqCharges	853.6	5.3	848.3	1464.0	615.7	76	640	0	716	0.8382	
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990	
ENGLNG	241.5	0.0	241.5	8678.6	8437.1	0	0	0	0	0.0000	
ENGPropane	160.8	0.0	160.8	6370.0	6209.2	0	0	0	0	0.0000	
ENG C3Truck	160.8	0.0	160.8	4392.0	4231.2	161	0	0	161	1.0000	
Dracut 30	3172.1	6.7	3165.4	10980.0	7814.6	138	4388	0	4526	1.4268	
UnionCharges	873.5	9.9	863.5	1481.2	617.7	0	140	0	140	0.1603	
Dracut 20	876.0	1.8	874.2	7320.0	6445.8	38	1134	0	1172	1.3376	

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2261.9	63.0	2198.8	9150.0	6951.2	673	0	0	673	0.2976
Z4toTGPH	3897.4	33.1	3864.3	7686.0	3821.7	439	0	0	439	0.1126
Z4toStg	2745.5	9.1	2736.5	7904.1	5167.7	136	0	0	136	0.0495
Engie2CG	409.5	1.1	408.4	1064.0	655.6	14	0	0	14	0.0334
██████████	337.4	0.7	336.7	3080.6	2743.9	15	0	0	15	0.0434
██████████	347.8	10.4	337.4	3087.1	2749.7	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	16.0	11.8	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2928.0	2928.0	0	0	0	0	0.0000
Engie2ENGLNG	220.5	0.0	220.5	1064.0	843.5	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		185.3				2350	15309		17660	0.5887

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	57698	Injection Cost	48	Transportation Cost	2362	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	162.49
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	162.49
Total Variable	57725	Total Variable	94	Total Variable	2362		
Demand/Reservation Co	7777	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7871	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	65596	Net Storage Cost	1762	Net Trans Cost	17671	Total Gas Cost	85030
						Total Revenue	0
						Net Cost	85030

Avg Cost of Served Demand 5.200 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.958 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	16352.3	0.0	16352.3	0.0	16352.3	16352.3	0.0	0	162.5	0.0
Total	16352.3	0.0	16352.3	0.0	16352.3	16352.3	0.0	0	162.5	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2358.3	18250.0	15891.7			2.8102	6627	0	6627	2.8102
ENGNiagara	1140.8	1167.3	26.4			2.1443	2446	0	2446	2.1443
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6647.9	6690.4	42.5			1.9830	13183	0	13183	1.9830
Dracut 20	406.0	7300.0	6894.0			7.8791	3199	0	3199	7.8791
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	936.0	2190.0	1254.0			2.7996	2620	0	2620	2.7996

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	352.2	352.2	0.0							
Dracut 30	3834.9	10950.0	7115.1			6.2711	24049	0	24049	6.2711
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	16572.0						57725	7871	65596	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.4	241.4	0	0.0	12	95	0.0	0	54	54	0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1775.5	1756.5	0	19.0	1498	96	0.0	0	2991	3018	26
ENGDomion	103	100	108.8	106.7	0	2.1	103	100	0.0	0	210	212	2
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1364	1374	10
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	491	491	-0
Total	2607	98	3240.8	3214.0	0	26.8	2607	98	5.6	0	6090	6128	38

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2358.3	0.0	2358.3	7882.5	5524.2	0	5043	0	5043	2.1385
ENG TGP2Stg	106.4	2.2	104.2	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6060.5	0.0	6060.5	8698.1	2637.6	0	0	0	0	0.0000
ENG TGPNBD	1140.8	7.1	1133.7	1139.5	5.8	97	267	0	365	0.3197
ENG TGPShort	2806.1	23.9	2782.2	10262.0	7479.7	316	2688	0	3004	1.0704
TrCanCharges	925.3	10.6	914.7	1477.2	562.5	0	698	0	698	0.7539
IroqCharges	914.7	5.7	909.0	1460.0	551.0	81	640	0	721	0.7882
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.4	0.0	241.4	8654.9	8413.5	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3334.9	7.0	3327.9	10950.0	7622.1	145	4388	0	4533	1.3593
UnionCharges	936.0	10.7	925.3	1477.2	551.8	0	140	0	140	0.1496
Dracut 20	910.3	1.9	908.4	7300.0	6391.6	40	1134	0	1173	1.2888

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2252.0	62.8	2189.2	9125.0	6935.8	670	0	0	670	0.2976
Z4toTGPH	3904.5	33.2	3871.3	7665.0	3793.7	440	0	0	440	0.1126
Z4toStg	2743.4	9.1	2734.4	7882.5	5148.2	136	0	0	136	0.0495
Engie2CG	409.6	1.1	408.5	1057.0	648.5	14	0	0	14	0.0334
██████████	337.4	0.7	336.7	3072.2	2735.5	15	0	0	15	0.0434
██████████	347.8	10.4	337.4	3078.7	2741.3	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.4	0.0	220.4	1057.0	836.6	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		187.3				2362	15309		17671	0.5821

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	60337	Injection Cost	48	Transportation Cost	2381	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	165.66
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	165.66
Total Variable	60365	Total Variable	94	Total Variable	2381		
Demand/Reservation Co	7777	Demand Cost	695	Demand Cost	15309		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7871	Total Fixed	1669	Total Fixed	15309		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68236	Net Storage Cost	1762	Net Trans Cost	17690	Total Gas Cost	87689
						Total Revenue	0
						Net Cost	87689

Avg Cost of Served Demand 5.252 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.037 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	16695.7	0.0	16695.7	0.0	16695.7	16695.7	0.0	0	165.7	0.0
Total	16695.7	0.0	16695.7	0.0	16695.7	16695.7	0.0	0	165.7	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2361.9	18250.0	15888.1			2.8362	6699	0	6699	2.8362
ENGNiagara	1142.1	1167.3	25.2			2.1912	2503	0	2503	2.1912
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6656.6	6690.4	33.8			2.0468	13625	0	13625	2.0468
Dracut 20	484.0	7300.0	6816.0			8.1957	3966	0	3966	8.1957
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	993.3	2190.0	1196.7			2.8127	2794	0	2794	2.8127

162

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	352.2	352.2	0.0							
Dracut 30	4016.2	10950.0	6933.8			6.2651	25162	0	25162	6.2651
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	16902.1						60365	7871	68236	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	241.1	241.1	0	0.0	12	95	0.0	0	54	55	1
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1759.8	1756.5	0	18.8	1482	95	0.0	-16	3018	3086	69
ENGDominion	103	100	108.7	106.6	0	2.1	103	100	0.0	0	212	219	7
ENGNGFG	671	100	720.9	715.2	0	5.7	671	100	5.6	0	1374	1417	44
ENGHON	246	100	233.3	233.3	0	0.0	246	100	0.0	0	491	505	14
Total	2607	98	3224.6	3213.6	0	26.6	2591	97	5.6	-16	6128	6262	134

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2361.9	0.0	2361.9	7882.5	5520.7	0	5043	0	5043	2.1353
ENG TGP2Stg	106.3	2.2	104.1	7882.5	7778.4	27	0	0	27	0.2572
ENG TGPLong	6088.4	0.0	6088.4	8698.1	2609.7	0	0	0	0	0.0000
ENG TGPNBD	1142.1	7.1	1135.0	1139.5	4.5	97	267	0	365	0.3194
ENG TGPShort	2806.0	23.9	2782.2	10262.0	7479.8	316	2688	0	3004	1.0705
TrCanCharges	982.0	11.3	970.7	1477.2	506.5	0	698	0	698	0.7104
IroqCharges	970.7	6.0	964.7	1460.0	495.3	86	640	0	726	0.7478
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	241.1	0.0	241.1	8654.9	8413.8	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3496.0	7.3	3488.7	10950.0	7461.3	152	4388	0	4540	1.2986
UnionCharges	993.3	11.3	982.0	1477.2	495.2	0	140	0	140	0.1410
Dracut 20	1008.4	2.1	1006.3	7300.0	6293.7	44	1134	0	1177	1.1677

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2255.6	62.9	2192.7	9125.0	6932.3	671	0	0	671	0.2976
Z4toTGPLH	3929.0	33.4	3895.6	7665.0	3769.4	443	0	0	443	0.1126
Z4toStg	2727.6	9.0	2718.6	7882.5	5163.9	135	0	0	135	0.0495
Engie2CG	409.9	1.1	408.7	1057.0	648.3	14	0	0	14	0.0334
██████████	337.4	0.7	336.7	3072.2	2735.5	15	0	0	15	0.0434
██████████	347.8	10.4	337.4	3078.7	2741.3	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	220.1	0.0	220.1	1057.0	836.9	220	0	0	220	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		189.7				2381	15309		17690	0.5737

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	287817	Injection Cost	238	Transportation Cost	11741	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	230	Other Variable Cost	0	System Served	165.66
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	165.66
Total Variable	287952	Total Variable	469	Total Variable	11741		
Demand/Reservation Co	38885	Demand Cost	3477	Demand Cost	76547		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	39357	Total Fixed	8343	Total Fixed	76547		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	327309	Net Storage Cost	8812	Net Trans Cost	88288	Total Gas Cost	424409
						Total Revenue	0
						Net Cost	424409

Avg Cost of Served Demand 5.279 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.017 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	80401.0	0.0	80401.0	0.0	80401.0	80401.0	0.0	0	165.7	0.0	
Total	80401.0	0.0	80401.0	0.0	80401.0	80401.0	0.0	0	165.7	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11853.8	91300.0	79446.2			2.8709	34031	0	34031	2.8709
ENGNiagara	5717.6	5839.5	122.0			2.2010	12584	0	12584	2.2010
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	458.7	458.7	0.0			15.0000	6881	0	6881	15.0000
ENG-Z4	33099.4	33460.3	360.9			2.0871	69081	0	69081	2.0871
Dracut 20	1715.7	36520.0	34804.3			7.9495	13639	0	13639	7.9495
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DLiqSummer	105.0	105.0	0.0							
ENG Dawn	4359.9	10956.0	6596.1			2.8953	12623	0	12623	2.8953

APPENDIX 6.E.1 LOW GROWTH NORMAL YEAR RESOURCE MIX

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 1z 15-Sep-2017
Report 1z (Continued) 08:27:10

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Repsol 40	1760.8	1760.8	0.0							
Dracut 30	18501.6	54780.0	36278.4			6.3496	117477	0	117477	6.3496
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	81488.2						287952	39357	327309	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1206.4	1206.9	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	804.2	804.2	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8860.4	8765.5	0	94.8	1482	95	0.0	0	2573	3086	513
ENGDomion	103	100	545.2	534.6	0	10.6	103	100	0.0	0	178	219	41
ENGNGF	671	100	3608.8	3580.3	0	28.5	671	100	28.3	0	1164	1417	253
ENGHON	246	100	1172.6	1172.6	0	0.0	246	100	0.0	0	427	505	78
Total	2592	97	16197.5	16064.1	0	133.9	2591	97	28.3	-1	5426	6262	836

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	11853.8	0.0	11853.8	39434.3	27580.5	0	25216	0	25216	2.1273
ENGTP2Stg	533.1	10.9	522.2	39434.3	38912.1	137	0	0	137	0.2572
ENGTPLong	30229.8	0.0	30229.8	43512.1	13282.3	0	0	0	0	0.0000
ENGTPBND	5717.6	35.4	5682.1	5700.8	18.6	488	1337	0	1825	0.3191
ENGTPShort	14024.7	119.2	13905.5	51338.0	37432.5	1580	13438	0	15018	1.0708
TrCanCharges	4310.3	49.6	4260.7	7389.8	3129.1	0	3488	0	3488	0.8092
IroqCharges	4260.7	26.4	4234.3	7304.0	3069.7	378	3199	0	3577	0.8395
ENGPNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	1206.9	0.0	1206.9	43298.1	42091.2	0	0	0	0	0.0000
ENGPropane	804.2	0.0	804.2	31710.0	30905.8	0	0	0	0	0.0000
ENG3Truck	804.2	0.0	804.2	21912.0	21107.8	804	0	0	804	1.0000
Dracut 30	16002.1	33.6	15968.5	54780.0	38811.5	695	21942	0	22636	1.4146
UnionCharges	4359.9	49.7	4310.3	7389.8	3079.5	0	700	0	700	0.1606
Dracut 20	4236.5	8.9	4227.6	36520.0	32292.4	184	5668	0	5852	1.3814

962

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	11320.7	315.5	11005.1	45650.0	34644.9	3369	0	0	3369	0.2976
Z4toTGPH	19389.4	164.8	19224.6	38346.0	19121.4	2184	0	0	2184	0.1126
Z4toStg	13709.9	45.2	13664.7	39434.3	25769.6	679	0	0	679	0.0495
Engie2CG	2048.6	5.7	2042.9	5292.0	3249.1	68	0	0	68	0.0334
██████████	1686.7	3.5	1683.2	15369.4	13686.2	73	0	0	73	0.0434
██████████	1738.9	52.2	1686.7	15401.7	13715.0	0	0	0	0	0.0000
Repsol2Drac	21.9	0.7	21.3	79.5	58.3	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	14608.0	14608.0	0	0	0	0	0.0000
Engie2ENGLNG	1101.4	0.0	1101.4	5292.0	4190.6	1101	0	0	1101	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
Total		925.6				11741	76547		88288	0.5894

RESOURCE MIX RESULTS

Units: MDT

=====						
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	0.00
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	8.80
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments	██████████	NOV 2017	OCT 2022	0.00	150.00	8.42
	██████████	NOV 2017	OCT 2022	0.00	150.00	8.43
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	0.00
	██████████	NOV 2017	OCT 2022	0.00	150.00	0.00

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13
Report 13 15-Sep-2017
08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1482.3	2393.9	2866.3	2566.0	2083.6	1194.9	694.5	416.1	315.0	313.3	396.8	762.5	15485.3
Total Demand	1482.3	2393.9	2866.3	2566.0	2083.6	1194.9	694.5	416.1	315.0	313.3	396.8	762.5	15485.3
=====													
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
=====													
Fuel Consumed													
Transport	24.2	28.1	30.4	27.8	24.3	11.9	7.4	4.8	4.2	4.2	4.7	8.4	180.5
Injection	3.4	0.0	0.0	0.0	0.0	0.7	2.3	4.1	5.0	5.1	4.4	1.9	26.8
Withdrawal	0.4	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7
Total Fuel	28.0	29.3	31.9	29.1	25.5	12.6	9.7	8.9	9.2	9.3	9.1	10.3	213.0
=====													
Storage Injections													
ENGLNG	2.9	35.8	68.8	67.0	45.4	0.0	7.1	2.9	0.0	0.0	8.7	2.3	240.9
ENGPropane	0.0	0.0	59.9	31.9	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	257.0	0.0	0.0	0.0	0.0	0.0	139.8	276.0	317.8	319.0	304.0	141.3	1755.0
ENGDominion	9.2	0.0	0.0	0.0	0.0	6.5	1.0	4.8	23.7	28.3	24.3	8.9	106.7
ENGNGF	48.8	0.0	0.0	0.0	0.0	67.4	92.4	127.9	137.5	135.9	80.3	29.2	719.6
ENGHON	26.9	0.0	0.0	0.0	0.0	24.0	11.3	25.9	41.1	41.3	39.7	26.7	236.9
Total Inj	344.8	35.8	128.6	98.9	45.4	97.9	263.2	449.0	531.6	536.2	468.6	219.8	3219.9
=====													
Total Req	1855.2	2459.0	3026.9	2694.0	2154.5	1305.4	967.4	873.9	855.8	858.8	874.5	992.7	18918.1
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	396.7	87.3	19.6	0.0	0.0	0.0	0.0	23.4	2374.7
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNGTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	59.9	31.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	723.1	787.6	758.9	740.6	743.6	753.1	787.6	6547.9
Dracut 20	10.9	5.2	80.4	52.4	61.7	15.1	0.0	0.0	0.0	0.0	0.0	0.0	225.7
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENG3Dawn	110.5	126.9	126.9	114.6	113.7	89.9	28.4	0.0	0.0	0.0	0.0	49.5	760.6
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	88.0	114.5	107.3	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.2
Dracut 30	502.3	657.8	713.2	705.9	524.9	286.0	7.9	0.0	0.0	0.0	0.0	11.8	3409.8
Engie Combo	2.9	149.4	185.4	188.2	104.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1588.4	1819.4	2073.4	1916.2	1607.7	1302.5	964.5	871.1	852.9	855.9	871.7	989.7	15713.3

209

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	129.0	31.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	179.0	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1739.4
ENGDominion	9.2	22.4	29.0	25.3	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.7
ENGNGF	48.8	158.6	189.0	170.7	152.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	719.6
ENGHON	26.9	54.0	60.7	54.0	41.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	236.9
Total With	266.8	639.7	953.5	777.8	546.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3204.9
Total Supply	1855.2	2459.0	3026.9	2694.0	2154.5	1305.4	967.4	873.9	855.8	858.8	874.5	992.7	18918.1
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1192	726	297	0	0	140	416	734	1053	1357	1482
ENGDominion	103	103	80	51	26	5	12	13	18	41	70	94	103
ENGNGF	671	671	512	323	152	0	67	160	288	425	561	642	671
ENGHON	246	246	192	132	78	36	60	72	98	139	180	220	246
Total Inv	2592	2670	2066	1241	562	61	156	416	862	1391	1924	2390	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
Forecast Demand													
ENGIDesign	1506.0	2436.3	2909.2	2609.6	2118.0	1210.2	706.3	426.9	325.5	326.8	413.1	779.5	15767.4
Total Demand	1506.0	2436.3	2909.2	2609.6	2118.0	1210.2	706.3	426.9	325.5	326.8	413.1	779.5	15767.4
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.7	28.2	30.5	27.8	24.9	12.2	7.5	4.8	4.3	4.3	5.0	8.6	182.9
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.2	4.1	5.0	5.1	4.4	1.9	26.8
Withdrawal	0.4	1.3	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.4	29.4	32.0	29.2	26.1	13.1	9.8	8.9	9.2	9.4	9.3	10.5	215.3
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.4	0.0	7.1	2.9	0.0	0.0	8.7	2.3	241.5
ENGPropane	0.0	0.0	57.9	33.8	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	134.3	278.0	316.8	319.0	302.3	147.6	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	8.0	0.0	4.7	22.4	28.0	24.1	9.6	107.0
ENGNGF	44.4	0.0	0.0	0.0	0.0	93.3	98.3	122.3	136.3	132.6	77.4	10.7	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	30.7	3.9	19.7	41.3	41.3	39.3	31.4	234.5
Total Inj	343.4	35.8	126.7	100.8	45.4	131.9	255.2	439.0	528.3	532.5	463.3	213.1	3215.5
Total Req	1877.8	2501.5	3067.9	2739.7	2189.6	1355.2	971.3	874.8	863.0	868.7	885.8	1003.1	19198.3
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	406.4	88.3	21.5	0.0	0.0	0.0	0.0	26.9	2390.7
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	57.9	33.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	758.3	787.6	759.8	747.8	753.5	756.1	787.6	6604.0
Dracut 20	8.6	11.0	92.6	71.7	70.4	17.7	0.0	0.0	0.0	0.0	0.0	0.0	272.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAwn	122.8	126.9	126.9	114.6	123.4	91.8	28.7	0.0	0.0	0.0	8.3	53.2	796.6
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	88.0	114.5	106.7	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.2
Dracut 30	500.8	698.4	744.2	730.9	530.8	295.1	9.7	0.0	0.0	0.0	0.0	15.0	3524.8
Engie Combo	3.5	149.4	185.4	187.6	104.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1597.5	1865.7	2114.5	1961.2	1642.3	1352.3	968.4	872.0	860.1	865.7	883.0	1000.1	15982.7

300

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	127.0	33.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	467.8	427.1	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	25.3	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.0
ENGNGF	44.4	158.6	189.0	170.7	152.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	50.1	60.7	54.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	635.8	953.3	778.5	547.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3215.5
=====													
Total Supply	1877.8	2501.5	3067.9	2739.7	2189.6	1355.2	971.3	874.8	863.0	868.7	885.8	1003.1	19198.3
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	724	297	0	0	134	412	729	1048	1350	1498
ENGDominion	103	103	80	51	26	6	14	14	19	41	69	93	103
ENGNGF	671	671	512	323	152	0	93	192	314	450	583	660	671
ENGHON	246	246	196	135	81	39	69	73	93	134	176	215	246
Total Inv	2607	2670	2070	1243	566	64	193	445	881	1407	1936	2397	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Forecast Demand													
ENGIDesign	1534.7	2464.7	2942.3	2698.8	2141.1	1231.7	721.6	440.0	337.6	343.2	431.4	813.5	16100.4
Total Demand	1534.7	2464.7	2942.3	2698.8	2141.1	1231.7	721.6	440.0	337.6	343.2	431.4	813.5	16100.4
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	24.8	28.2	30.5	28.8	24.6	12.3	9.4	4.9	4.4	4.4	4.9	8.2	185.3
Injection	3.4	0.0	0.0	0.0	0.0	0.9	2.8	4.0	4.9	5.0	4.2	1.7	26.8
Withdrawal	0.4	1.2	1.5	1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.5	29.4	32.0	30.2	25.8	13.3	12.1	8.9	9.2	9.4	9.0	10.0	217.8
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.1	45.3	0.0	7.1	2.9	2.9	0.0	5.8	2.3	241.5
ENGPropane	0.0	0.0	72.0	19.7	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	177.9	279.3	316.3	318.8	295.1	110.6	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	6.2	3.7	2.7	19.9	27.4	24.6	12.9	107.6
ENGNGF	44.4	0.0	0.0	0.0	0.0	101.7	96.8	114.2	134.4	128.2	60.1	35.4	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	23.4	16.6	16.0	41.3	41.3	39.7	29.3	234.5
Total Inj	343.4	35.8	140.8	86.8	45.3	131.3	313.6	426.6	526.3	527.3	436.8	202.1	3216.1
Total Req	1906.6	2529.8	3115.1	2815.8	2212.3	1376.2	1047.3	875.4	873.1	879.9	877.2	1025.6	19534.3
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	398.7	393.2	89.3	24.2	0.0	0.0	0.0	0.0	0.0	2368.2
ENGNiagara	94.2	97.4	97.4	91.1	97.4	91.1	97.4	92.5	97.4	97.4	90.8	97.4	1141.4
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	72.0	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.0	787.6	762.2	755.0	764.7	762.2	787.6	6642.9
Dracut 20	10.6	19.4	118.4	81.6	76.4	21.5	0.0	0.0	0.0	0.0	0.0	0.0	328.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	0.0	5.8	2.3	21.0
ENG Dawn	122.8	126.9	126.9	118.7	124.1	94.6	99.6	0.0	0.0	0.0	0.0	59.8	873.5
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	88.0	114.5	106.9	42.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.2
Dracut 30	527.5	727.0	771.7	751.6	560.3	308.0	12.0	0.0	0.0	0.0	0.0	57.7	3715.9
Engie Combo	3.5	148.8	185.4	188.1	104.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1626.3	1902.1	2182.0	2008.0	1665.4	1373.4	1044.4	872.6	870.2	877.0	874.3	1022.6	16318.2

202

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.1	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.5
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	448.3	446.6	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	29.0	26.1	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.6
ENGNGF	44.4	152.5	189.0	176.8	152.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	56.5	42.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	234.5
Total With	280.4	627.7	933.1	807.8	546.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3216.1
Total Supply	1906.6	2529.8	3115.1	2815.8	2212.3	1376.2	1047.3	875.4	873.1	879.9	877.2	1025.6	19534.3
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	10	13	12
ENGPropane	77	77	77	23	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	743	297	0	0	178	457	773	1092	1387	1498
ENGDominion	103	103	80	51	25	5	11	15	18	38	65	90	103
ENGNGF	671	671	518	329	152	0	102	198	313	447	575	635	671
ENGHON	246	246	198	137	81	39	62	79	95	136	177	217	246
Total Inv	2607	2670	2078	1286	565	63	192	502	926	1449	1974	2408	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1570.1	2510.6	2985.1	2675.4	2171.9	1254.7	736.8	451.7	348.3	356.1	449.7	841.7	16352.3
Total Demand	1570.1	2510.6	2985.1	2675.4	2171.9	1254.7	736.8	451.7	348.3	356.1	449.7	841.7	16352.3
=====													
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
=====													
Fuel Consumed													
Transport	24.9	28.3	30.7	28.0	24.8	12.5	10.1	5.2	4.9	4.5	5.0	8.4	187.3
Injection	3.4	0.0	0.0	0.0	0.0	1.0	3.1	4.0	5.1	4.9	3.8	1.6	26.8
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.6	29.5	32.2	29.3	26.0	13.5	13.2	9.2	10.0	9.4	8.7	10.0	219.7
=====													
Storage Injections													
ENGLNG	3.5	35.8	68.8	67.0	45.3	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.4
ENGPropane	0.0	0.0	57.1	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	247.2	300.9	319.0	304.3	237.8	88.6	1756.5
ENGDominion	10.1	0.0	0.0	0.0	0.0	8.5	4.0	5.4	28.3	27.5	14.4	8.2	106.7
ENGNGF	44.4	0.0	0.0	0.0	0.0	101.8	42.3	77.9	137.5	137.5	113.0	60.6	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	20.0	15.7	27.6	41.3	41.3	38.0	22.5	233.3
Total Inj	343.4	35.8	125.9	101.6	45.3	130.4	327.9	426.2	540.7	525.2	417.6	193.8	3214.0
=====													
Total Req	1942.1	2575.9	3143.2	2806.3	2243.3	1398.6	1078.0	887.1	899.0	890.8	876.1	1045.6	19785.9
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	393.7	90.5	26.4	0.0	0.0	0.0	0.0	0.0	2358.3
ENGNiagara	94.2	97.4	97.4	88.0	97.4	91.2	97.4	93.0	97.4	97.4	92.7	97.4	1140.8
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	57.1	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	760.2	772.6	762.2	787.6	6647.9
Dracut 20	33.9	28.6	130.2	104.1	82.3	26.9	0.0	0.0	0.0	0.0	0.0	0.0	406.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENGDAWN	122.8	126.9	126.9	114.6	125.1	97.6	125.3	11.1	20.7	0.0	0.0	65.0	936.0
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	88.0	114.5	105.6	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.2
Dracut 30	539.7	757.6	785.7	764.1	580.0	320.5	14.8	0.0	0.0	0.0	0.0	72.6	3834.9
Engie Combo	3.5	149.4	185.4	186.0	105.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1661.7	1942.5	2193.0	2024.9	1695.1	1395.7	1075.0	884.3	896.1	887.8	873.3	1042.6	16572.0

300

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.9	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.4
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.5	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.7
ENGNGF	44.4	158.2	189.0	170.7	152.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.4	633.4	950.2	781.4	548.2	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3214.0
Total Supply	1942.1	2575.9	3143.2	2806.3	2243.3	1398.6	1078.0	887.1	899.0	890.8	876.1	1045.6	19785.9
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	726	297	0	0	247	548	867	1172	1409	1498
ENGDominion	103	103	80	52	26	6	15	19	24	52	80	94	103
ENGNGF	671	671	513	324	153	0	102	144	222	360	497	610	671
ENGHON	246	246	198	137	83	40	60	75	103	144	186	224	246
Total Inv	2607	2670	2072	1248	568	65	193	518	941	1479	2001	2416	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1605.7	2558.1	3038.3	2722.5	2210.4	1279.7	752.7	463.5	358.3	368.9	466.6	871.0	16695.7
Total Demand	1605.7	2558.1	3038.3	2722.5	2210.4	1279.7	752.7	463.5	358.3	368.9	466.6	871.0	16695.7
=====													
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
=====													
Fuel Consumed													
Transport	24.9	28.4	30.8	28.1	24.9	12.7	10.2	6.3	5.1	4.6	5.1	8.7	189.7
Injection	3.4	0.0	0.0	0.0	0.0	1.0	3.1	4.2	5.1	4.8	3.6	1.5	26.6
Withdrawal	0.4	1.2	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	28.6	29.6	32.3	29.4	26.1	13.6	13.3	10.5	10.2	9.4	8.6	10.2	222.0
=====													
Storage Injections													
ENGLNG	3.5	35.8	68.5	67.0	45.3	0.0	7.1	2.9	2.9	2.9	2.9	2.3	241.1
ENGPropane	0.0	0.0	57.1	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	258.6	0.0	0.0	0.0	0.0	0.0	254.5	306.3	319.0	304.4	214.6	83.6	1740.9
ENGDominion	10.1	0.0	0.0	0.0	0.0	11.2	2.1	11.3	28.3	25.2	13.9	4.6	106.6
ENGNGF	44.4	0.0	0.0	0.0	0.0	93.1	33.8	89.1	137.5	131.5	123.0	62.7	715.2
ENGHON	26.9	0.0	0.0	0.0	0.0	25.2	8.5	33.3	41.3	41.3	35.6	21.2	233.3
Total Inj	343.4	35.8	125.6	101.6	45.3	129.5	317.5	454.3	540.7	517.0	401.4	186.0	3198.0
=====													
Total Req	1977.7	2623.5	3196.2	2853.6	2281.9	1422.8	1083.5	928.4	909.2	895.3	876.7	1067.1	20115.7
=====													
Sources of Supply													
ENGUSGC	610.3	426.2	426.2	385.0	394.1	92.2	27.8	0.0	0.0	0.0	0.0	0.0	2361.9
ENGNiagara	94.2	97.4	97.4	88.0	97.4	91.6	97.4	93.4	97.4	97.4	93.2	97.4	1142.1
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	57.1	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	764.3	777.1	762.2	787.6	6656.6
Dracut 20	20.6	38.6	168.4	129.8	91.8	34.6	0.0	0.0	0.0	0.0	0.0	0.0	484.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	126.3	100.3	125.6	51.9	26.7	0.0	0.1	71.1	993.3
DAWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	0.0	88.0	114.5	105.6	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	352.2
Dracut 30	588.6	795.7	800.8	787.5	605.0	332.0	18.6	0.0	0.0	0.0	0.0	87.9	4016.2
Engie Combo	3.5	149.4	185.4	184.1	107.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1697.4	1990.6	2246.3	2072.1	1733.1	1419.9	1080.5	925.5	906.3	892.4	873.8	1064.1	16902.1

900

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.8	79.6	67.0	35.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	241.1
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	196.1	368.9	466.0	429.0	296.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1756.5
ENGDominion	10.1	22.4	28.5	25.3	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.6
ENGNGF	44.4	157.6	189.0	170.7	153.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	715.2
ENGHON	26.9	48.2	60.7	54.8	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	233.3
Total With	280.3	632.8	950.0	781.4	548.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3213.6
Total Supply	1977.7	2623.5	3196.2	2853.6	2281.9	1422.8	1083.5	928.4	909.2	895.3	876.7	1067.1	20115.7
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1192	726	297	0	0	254	561	880	1184	1399	1498
ENGDominion	103	103	80	52	26	6	17	19	31	59	84	98	103
ENGNGF	671	671	513	324	153	0	93	127	216	354	485	608	671
ENGHON	246	246	198	137	83	40	65	73	107	148	189	225	246
Total Inv	2607	2670	2073	1249	569	65	192	506	958	1496	2010	2408	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	15485.3	15767.4	16100.4	16352.3	16695.7	80401.0
Total Demand	15485.3	15767.4	16100.4	16352.3	16695.7	80401.0
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	180.5	182.9	185.3	187.3	189.7	925.6
Injection	26.8	26.8	26.8	26.8	26.6	133.9
Withdrawal	5.7	5.6	5.6	5.6	5.6	28.3
Total Fuel	213.0	215.3	217.8	219.7	222.0	1087.8
Storage Injections						
ENGLNG	240.9	241.5	241.5	241.4	241.1	1206.4
ENGPropane	160.8	160.8	160.8	160.8	160.8	804.2
ENGFSMA	1755.0	1756.5	1756.5	1756.5	1740.9	8765.5
ENGDominion	106.7	107.0	107.6	106.7	106.6	534.6
ENGNGF	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total Inj	3219.9	3215.5	3216.1	3214.0	3198.0	16063.5
Total Req	18918.1	19198.3	19534.3	19785.9	20115.7	97552.4
=====						
Sources of Supply						
ENGUSGC	2374.7	2390.7	2368.2	2358.3	2361.9	11853.8
ENGNiagara	1146.6	1146.6	1141.4	1140.8	1142.1	5717.6
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	91.7	91.7	91.7	91.7	91.7	458.7
ENG-Z4	6547.9	6604.0	6642.9	6647.9	6656.6	33099.4
Dracut 20	225.7	272.0	328.0	406.0	484.0	1715.7
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAWN	760.6	796.6	873.5	936.0	993.3	4359.9
DAWN	0.0	0.0	0.0	0.0	0.0	0.0
Repsol 40	352.2	352.2	352.2	352.2	352.2	1760.8
Dracut 30	3409.8	3524.8	3715.9	3834.9	4016.2	18501.6
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	15713.3	15982.7	16318.2	16572.0	16902.1	81488.2

803

APPENDIX 6.E.2 LOW GROWTH NORMAL YEAR MONTHLY REQUIREMENTS

Scen 1330 Base Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:27:10

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	241.5	241.5	241.5	241.4	241.1	1206.9
ENGPropane	160.8	160.8	160.8	160.8	160.8	804.2
ENGFSMA	1739.4	1756.5	1756.5	1756.5	1756.5	8765.5
ENGDominion	106.7	107.0	107.6	106.7	106.6	534.6
ENGNGFG	719.6	715.2	715.2	715.2	715.2	3580.3
ENGHON	236.9	234.5	234.5	233.3	233.3	1172.6
Total With	3204.9	3215.5	3216.1	3214.0	3213.6	16064.1
=====						
Total Supply	18918.1	19198.3	19534.3	19785.9	20115.7	97552.4
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGFG	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	12	12	12	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGFG	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2607	2607	2607	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

REDACTED
APPENDIX 6.F.1 LOW GROWTH DESIGN YEAR RESOURCE MIX

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 1 15-Sep-2017
Report 1 08:29:31

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	60955	Injection Cost	47	Transportation Cost	2321	JAN 19, 2018	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	155.33
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	155.33
Total Variable	60982	Total Variable	93	Total Variable	2321		
Demand/Reservation Co	7371	Demand Cost	695	Demand Cost	17678		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7465	Total Fixed	1669	Total Fixed	17678		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68447	Net Storage Cost	1761	Net Trans Cost	19999	Total Gas Cost	90207
						Total Revenue	0
						Net Cost	90207

Avg Cost of Served Demand 5.388 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 4.028 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	16741.0	0.0	16741.0	0.0	16741.0	16741.0	0.0	0	155.3	0.0
Total	16741.0	0.0	16741.0	0.0	16741.0	16741.0	0.0	0	155.3	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2371.2	18250.0	15878.8			3.0122	7143	0	7143	3.0122
ENGNiagara	1146.6	1167.3	20.6			2.3679	2715	0	2715	2.3679
ENGPNGTS	84.0	84.0	0.0			4.2010	353	0	353	4.2010
ENG3Winter	81.0	91.7	10.7			15.0000	1216	0	1216	15.0000
ENG-Z4	6538.1	6690.4	152.3			2.3201	15169	0	15169	2.3201
Dracut 20	918.0	7300.0	6382.0			5.5446	5090	0	5090	5.5446
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	760.0	2190.0	1430.0			3.1802	2417	0	2417	3.1802

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	718.4	1338.4	620.0			3.1590	2269	0	2269	3.1590
Repsol 40	314.6	314.6	0.0							
Dracut 30	3340.1	10950.0	7609.9			6.1474	20533	0	20533	6.1474
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	16992.2						60982	7465	68447	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	207.1	207.7	0	0.0	12	95	0.0	-1	130	57	-73
ENGPropane	77	100	150.1	150.1	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	1755.2	1720.8	0	18.8	1498	96	0.0	16	2573	3508	935
ENGDomion	103	100	111.4	109.2	0	2.2	103	100	0.0	0	178	245	66
ENGNGFG	671	100	713.3	707.7	0	5.6	671	100	5.6	0	1164	1596	432
ENGHON	246	100	246.2	246.2	0	0.0	246	100	0.0	0	427	555	128
Total	2592	97	3183.3	3141.7	0	26.6	2607	98	5.6	15	5426	6939	1514

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2371.2	0.0	2371.2	7882.5	5511.3	0	5043	0	5043	2.1268
ENG TGP2Stg	82.5	1.7	80.8	7882.5	7801.7	21	0	0	21	0.2572
ENG TGPLong	5976.5	0.0	5976.5	8698.1	2721.6	0	0	0	0	0.0000
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185
ENG TGPShort	2778.3	23.6	2754.7	10262.0	7507.3	313	2688	0	3001	1.0800
TrCanCharges	751.4	8.6	742.7	1477.2	734.4	0	698	0	698	0.9284
IroqCharges	742.7	4.6	738.1	1460.0	721.9	66	640	0	706	0.9501
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	207.7	0.0	207.7	8654.9	8447.2	0	0	0	0	0.0000
ENGPropane	150.1	0.0	150.1	6335.0	6184.9	0	0	0	0	0.0000
ENG C3Truck	150.1	0.0	150.1	4380.0	4229.9	150	0	0	150	1.0000
Dracut 30	2978.7	6.3	2972.5	10950.0	7977.5	129	4388	0	4518	1.5166
UnionCharges	760.0	8.7	751.4	1477.2	725.8	0	140	0	140	0.1842
Dracut 20	1283.8	2.7	1281.1	7300.0	6018.9	56	1134	0	1189	0.9265

NOV 2017 thru OCT 2018

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2288.7	63.8	2224.9	9125.0	6900.1	681	0	0	681	0.2976
Z4toTGPH	3783.7	32.2	3751.6	7665.0	3913.4	426	0	0	426	0.1126
Z4toStg	2754.4	9.1	2745.3	7882.5	5137.2	136	0	0	136	0.0495
Engie2CG	443.9	1.2	442.7	1057.0	614.3	15	0	0	15	0.0334
██████████	997.1	2.1	995.0	4034.9	3039.9	43	0	0	43	0.0434
██████████	310.0	9.3	300.7	2746.1	2445.3	0	0	0	0	0.0000
Repsol2Drac	4.6	0.1	4.4	15.9	11.5	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	186.1	0.0	186.1	1057.0	870.9	186	0	0	186	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	718.4	11.4	707.0	1317.1	610.1	0	1330	0	1330	1.8517
██████████	707.0	10.6	696.4	1297.4	601.0	0	████████████████████	████████████████████	████████████████████	████████████████████
Total		203.9				2321	████████████████████	████████████████████	████████████████████	████████████████████

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	59938	Injection Cost	47	Transportation Cost	2358	JAN 19, 2019	
Penalty Cost	0	Withdrawal Cost	45	Other Variable Cost	0	System Served	157.91
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	157.91
Total Variable	59965	Total Variable	93	Total Variable	2358		
Demand/Reservation Co	7371	Demand Cost	695	Demand Cost	17678		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7465	Total Fixed	1669	Total Fixed	17678		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	67430	Net Storage Cost	1761	Net Trans Cost	20036	Total Gas Cost	89227
						Total Revenue	0
						Net Cost	89227

Avg Cost of Served Demand 5.235 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.902 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17043.3	0.0	17043.3	0.0	17043.3	17043.3	0.0	0	157.9	0.0	
Total	17043.3	0.0	17043.3	0.0	17043.3	17043.3	0.0	0	157.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2393.9	18250.0	15856.1			2.9049	6954	0	6954	2.9049
ENGNiagara	1146.6	1167.3	20.6			2.1649	2482	0	2482	2.1649
ENGPNGTS	84.0	84.0	0.0			4.0502	340	0	340	4.0502
ENG3Winter	89.5	91.7	2.2			15.0000	1343	0	1343	15.0000
ENG-Z4	6604.0	6690.4	86.4			2.1147	13965	0	13965	2.1147
Dracut 20	990.0	7300.0	6310.0			5.6490	5592	0	5592	5.6490
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	774.2	2190.0	1415.8			2.9458	2281	0	2281	2.9458

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	727.7	1338.4	610.7			2.9292	2132	0	2132	2.9292
Repsol 40	314.6	314.6	0.0							
Dracut 30	3437.2	10950.0	7512.8			6.0903	20934	0	20934	6.0903
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	30.0	30.0			0.0000	0	0	0	0.0000
Total	17281.8						59965	7465	67430	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	211.2	211.2	0	0.0	12	95	0.0	0	57	55	-2
ENGPropane	77	100	158.6	158.6	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1756.2	1737.4	0	18.8	1498	96	0.0	0	3508	3139	-369
ENGDomion	103	100	111.4	109.2	0	2.2	103	100	0.0	0	245	221	-23
ENGNGFG	671	100	708.7	703.1	0	5.6	671	100	5.6	0	1596	1434	-162
ENGHON	246	100	248.1	248.1	0	0.0	246	100	0.0	0	555	517	-38
Total	2607	98	3194.1	3167.6	0	26.6	2607	98	5.6	0	6939	6345	-594

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TGPProd	2393.9	0.0	2393.9	7882.5	5488.7	0	5043	0	5043	2.1067	
ENG TGP2Stg	80.7	1.6	79.0	7882.5	7803.5	21	0	0	21	0.2572	
ENG TGPLong	6065.6	0.0	6065.6	8698.1	2632.5	0	0	0	0	0.0000	
ENG TGPNBD	1146.6	7.1	1139.5	1139.5	0.0	98	267	0	365	0.3185	
ENG TGPShort	2792.2	23.7	2768.5	10262.0	7493.5	314	2688	0	3002	1.0752	
TrCanCharges	765.4	8.8	756.6	1477.2	720.6	0	698	0	698	0.9114	
IroqCharges	756.6	4.7	751.9	1460.0	708.1	67	640	0	707	0.9343	
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155	
ENGLNG	211.2	0.0	211.2	8654.9	8443.7	0	0	0	0	0.0000	
ENGPropane	158.6	0.0	158.6	6335.0	6176.4	0	0	0	0	0.0000	
ENG C3Truck	158.6	0.0	158.6	4380.0	4221.4	159	0	0	159	1.0000	
Dracut 30	3106.9	6.5	3100.4	10950.0	7849.6	135	4388	0	4523	1.4559	
UnionCharges	774.2	8.8	765.4	1477.2	711.7	0	140	0	140	0.1808	
Dracut 20	1324.5	2.8	1321.7	7300.0	5978.3	57	1134	0	1191	0.8993	

NOV 2018 thru OCT 2019

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2313.2	64.5	2248.7	9125.0	6876.3	688	0	0	688	0.2976
Z4toTGPH	3849.6	32.7	3816.9	7665.0	3848.1	434	0	0	434	0.1126
Z4toStg	2754.4	9.1	2745.3	7882.5	5137.2	136	0	0	136	0.0495
Engie2CG	439.8	1.2	438.6	1057.0	618.4	15	0	0	15	0.0334
██████████	1006.3	2.1	1004.2	4034.9	3030.7	44	0	0	44	0.0434
██████████	310.2	9.3	300.9	2746.1	2445.1	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	190.2	0.0	190.2	1057.0	866.8	190	0	0	190	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	727.7	11.6	716.1	1317.1	601.0	0	1330	0	1330	1.8281
██████████	716.1	10.7	705.4	1297.4	592.0	0	████████████████████	0	████████████████████	████████████████████
Total		206.3				2358	████████████████████		████████████████████	████████████████████

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	60015	Injection Cost	47	Transportation Cost	2377	JAN 19, 2020	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	159.92
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	159.92
Total Variable	60042	Total Variable	93	Total Variable	2377		
Demand/Reservation Co	7371	Demand Cost	695	Demand Cost	17678		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7465	Total Fixed	1669	Total Fixed	17678		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	67507	Net Storage Cost	1762	Net Trans Cost	20055	Total Gas Cost	89323
						Total Revenue	0
						Net Cost	89323

Avg Cost of Served Demand 5.124 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.820 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17430.8	0.0	17430.8	0.0	17430.8	17430.8	0.0	0	159.9	0.0	
Total	17430.8	0.0	17430.8	0.0	17430.8	17430.8	0.0	0	159.9	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2367.9	18300.0	15932.1			2.7928	6613	0	6613	2.7928
ENGNiagara	1142.8	1170.5	27.7			2.1359	2441	0	2441	2.1359
ENGPNGTS	84.3	84.3	0.0			3.9659	334	0	334	3.9659
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6644.3	6698.7	54.4			1.9745	13119	0	13119	1.9745
Dracut 20	1094.1	7320.0	6225.9			5.5333	6054	0	6054	5.5333
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	785.4	2196.0	1410.6			2.8478	2237	0	2237	2.8478

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	796.1	1342.1	546.0			2.8134	2240	0	2240	2.8134
Repsol 40	314.6	314.6	0.0							
Dracut 30	3630.7	10980.0	7349.3			6.0132	21832	0	21832	6.0132
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	45.0	45.0			0.0000	0	0	0	0.0000
Total	17672.1						60042	7465	67507	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	213.9	213.9	0	0.0	12	95	0.0	0	55	54	-0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1755.7	1736.9	0	18.8	1498	96	0.0	0	3139	2991	-148
ENGDomion	103	100	112.0	109.8	0	2.2	103	100	0.0	0	221	210	-11
ENGNGF	671	100	715.3	709.6	0	5.7	671	100	5.6	0	1434	1363	-71
ENGHON	246	100	248.1	248.1	0	0.0	246	100	0.0	0	517	490	-27
Total	2607	98	3205.7	3179.1	0	26.6	2607	98	5.6	0	6345	6088	-258

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TGPPProd	2367.9	0.0	2367.9	7904.1	5536.2	0	5043	0	5043	2.1298	
ENG TGP2Stg	87.4	1.8	85.6	7904.1	7818.5	22	0	0	22	0.2572	
ENG TGPLong	6073.7	0.0	6073.7	8719.7	2646.0	0	0	0	0	0.0000	
ENG TGPBND	1142.8	7.1	1135.7	1142.7	6.9	98	267	0	365	0.3193	
ENG TGPShort	2798.8	23.8	2775.0	10290.1	7515.1	315	2688	0	3003	1.0729	
TrCanCharges	776.5	8.9	767.6	1481.2	713.7	0	698	0	698	0.8984	
IroqCharges	767.6	4.8	762.8	1464.0	701.2	68	640	0	708	0.9222	
ENG PNGTS	84.3	0.8	83.5	366.0	282.5	0	312	0	312	3.6990	
ENGLNG	213.9	0.0	213.9	8678.6	8464.7	0	0	0	0	0.0000	
ENGPropane	160.8	0.0	160.8	6370.0	6209.2	0	0	0	0	0.0000	
ENG C3Truck	160.8	0.0	160.8	4392.0	4231.2	161	0	0	161	1.0000	
Dracut 30	3363.5	7.1	3356.4	10980.0	7623.6	146	4388	0	4534	1.3481	
UnionCharges	785.4	8.9	776.5	1481.2	704.7	0	140	0	140	0.1783	
Dracut 20	1365.4	2.9	1362.6	7320.0	5957.4	59	1134	0	1193	0.8737	

NOV 2019 thru OCT 2020

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTGPZ4	2280.5	63.6	2217.0	9150.0	6933.0	679	0	0	679	0.2976
Z4toTGPLH	3889.8	33.1	3856.7	7686.0	3829.3	438	0	0	438	0.1126
Z4toStg	2754.5	9.1	2745.4	7904.1	5158.7	136	0	0	136	0.0495
Engie2CG	437.1	1.2	435.9	1064.0	628.1	15	0	0	15	0.0334
██████████	1072.8	2.3	1070.5	4046.0	2975.5	47	0	0	47	0.0434
Repsol2Drac	310.4	9.3	301.0	2753.6	2452.5	0	0	0	0	0.0000
██████████	4.2	0.1	4.1	16.0	11.9	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37881.0	37881.0	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2928.0	2928.0	0	0	0	0	0.0000
Engie2ENGLNG	192.9	0.0	192.9	1064.0	871.1	193	0	0	193	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	796.1	12.7	783.5	1320.7	537.3	0	1330	0	1330	1.6710
██████████	783.5	11.8	771.7	1300.9	529.2	0	██████████	0	██████████	██████████
Total		209.1				2377	██████████		██████████	██████████

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
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Commodity Cost	61364	Injection Cost	47	Transportation Cost	2389	JAN 19, 2021	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	162.49
Other Variable Cost	27	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	162.49
Total Variable	61391	Total Variable	93	Total Variable	2389		
Demand/Reservation Co	7371	Demand Cost	695	Demand Cost	17678		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7465	Total Fixed	1669	Total Fixed	17678		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	68856	Net Storage Cost	1762	Net Trans Cost	20067	Total Gas Cost	90684
						Total Revenue	0
						Net Cost	90684

Avg Cost of Served Demand 5.133 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.844 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	17666.8	0.0	17666.8	0.0	17666.8	17666.8	0.0	0	162.5	0.0	
Total	17666.8	0.0	17666.8	0.0	17666.8	17666.8	0.0	0	162.5	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2362.6	18250.0	15887.4			2.8108	6641	0	6641	2.8108
ENGNiagara	1142.4	1167.3	24.8			2.1442	2450	0	2450	2.1442
ENGPNGTS	84.0	84.0	0.0			3.9597	332	0	332	3.9597
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6648.8	6690.4	41.6			1.9830	13184	0	13184	1.9830
Dracut 20	1223.4	7300.0	6076.6			5.7143	6991	0	6991	5.7143
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	789.0	2190.0	1401.0			2.8470	2246	0	2246	2.8470

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	854.3	1338.4	484.1			2.7965	2389	0	2389	2.7965
Repsol 40	314.6	314.6	0.0							
Dracut 30	3679.5	10950.0	7270.5			5.9770	21992	0	21992	5.9770
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	17910.4						61391	7465	68856	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	216.6	216.6	0	0.0	12	95	0.0	0	54	54	0
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1755.0	1736.2	0	18.8	1498	96	0.0	0	2991	3018	27
ENGDomion	103	100	112.8	110.6	0	2.2	103	100	0.0	0	210	212	2
ENGNGF	671	100	716.4	710.7	0	5.7	671	100	5.6	0	1363	1373	10
ENGHON	246	100	247.6	247.6	0	0.0	246	100	0.0	0	490	491	0
Total	2607	98	3209.2	3182.6	0	26.6	2607	98	5.6	0	6088	6127	39

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENG TGPProd	2362.6	0.0	2362.6	7882.5	5519.9	0	5043	0	5043	2.1346
ENG TGP2Stg	90.0	1.8	88.2	7882.5	7794.4	23	0	0	23	0.2572
ENG TGPLong	6072.2	0.0	6072.2	8698.1	2625.9	0	0	0	0	0.0000
ENG TGPNBD	1142.4	7.1	1135.3	1139.5	4.2	98	267	0	365	0.3194
ENG TGPShort	2799.6	23.8	2775.8	10262.0	7486.2	315	2688	0	3003	1.0727
TrCanCharges	780.0	9.0	771.0	1477.2	706.2	0	698	0	698	0.8944
IroqCharges	771.0	4.8	766.2	1460.0	693.8	68	640	0	708	0.9185
ENG PNGTS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155
ENGLNG	216.6	0.0	216.6	8654.9	8438.3	0	0	0	0	0.0000
ENGPropane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000
ENG C3Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000
Dracut 30	3402.4	7.1	3395.3	10950.0	7554.7	148	4388	0	4536	1.3332
UnionCharges	789.0	9.0	780.0	1477.2	697.2	0	140	0	140	0.1775
Dracut 20	1505.0	3.2	1501.8	7300.0	5798.2	65	1134	0	1199	0.7967

320

NOV 2020 thru OCT 2021

Cost and Flow Summary

Units: MDT, USD (000)

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Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2272.6	63.3	2209.3	9125.0	6915.7	676	0	0	676	0.2976
Z4toTGPH	3896.1	33.1	3862.9	7665.0	3802.1	439	0	0	439	0.1126
Z4toStg	2752.7	9.1	2743.6	7882.5	5138.9	136	0	0	136	0.0495
Engie2CG	434.4	1.2	433.2	1057.0	623.8	15	0	0	15	0.0334
██████████	1128.8	2.4	1126.4	4034.9	2908.5	49	0	0	49	0.0434
██████████	309.9	9.3	300.6	2746.1	2445.4	0	0	0	0	0.0000
Repsol2Drac	4.7	0.1	4.5	15.9	11.4	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	195.6	0.0	195.6	1057.0	861.4	196	0	0	196	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	854.3	13.6	840.8	1317.1	476.4	0	1330	0	1330	1.5571
██████████	840.8	12.6	828.2	1297.4	469.2	0	██████████	██████████	██████████	██████████
Total		211.4				2389	██████████	██████████	██████████	██████████

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	64285	Injection Cost	47	Transportation Cost	2411	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	46	Other Variable Cost	0	System Served	165.66
Other Variable Cost	28	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	165.66
Total Variable	64313	Total Variable	93	Total Variable	2411		
Demand/Reservation Co	7371	Demand Cost	695	Demand Cost	17678		
Other Fixed Cost	94	Other Fixed Cost	973	Other Fixed Cost	0		
Total Fixed	7465	Total Fixed	1669	Total Fixed	17678		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	71778	Net Storage Cost	1762	Net Trans Cost	20089	Total Gas Cost	93628
						Total Revenue	0
						Net Cost	93628

Avg Cost of Served Demand 5.191 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.930 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary											
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved	
ENGIDesign	18035.1	0.0	18035.1	0.0	18035.1	18035.1	0.0	0	165.7	0.0	
Total	18035.1	0.0	18035.1	0.0	18035.1	18035.1	0.0	0	165.7	0.0	

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	2369.6	18250.0	15880.4			2.8365	6721	0	6721	2.8365
ENGNiagara	1143.7	1167.3	23.6			2.1912	2506	0	2506	2.1912
ENGPNGTS	84.0	84.0	0.0			3.9303	330	0	330	3.9303
ENG3Winter	91.7	91.7	0.0			15.0000	1376	0	1376	15.0000
ENG-Z4	6657.2	6690.4	33.2			2.0468	13626	0	13626	2.0468
Dracut 20	1363.7	7300.0	5936.3			5.9464	8109	0	8109	5.9464
ENG3Summer	69.1	93.5	24.4			10.0000	691	0	691	10.0000
DLiqSummer	21.0	21.0	0.0							
ENG Dawn	796.2	2190.0	1393.8			2.8702	2285	0	2285	2.8702

NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	904.2	1338.4	434.2			2.8097	2541	0	2541	2.8097
Repsol 40	314.6	314.6	0.0							
Dracut 30	3820.7	10950.0	7129.3			6.0226	23010	0	23010	6.0226
Engie Combo	630.0	630.0	0.0							
C/G SUPPLY	0.0	0.0	0.0			0.0000	0	0	0	0.0000
Total	18265.7						64313	7465	71778	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	12	95	219.9	219.9	0	0.0	12	95	0.0	0	54	55	1
ENGPropane	77	100	160.8	160.8	0	0.0	77	100	0.0	0	979	979	0
ENGFSMA	1498	96	1738.4	1735.4	0	18.6	1482	95	0.0	-16	3018	3087	69
ENGDomion	103	100	112.7	110.5	0	2.2	103	100	0.0	0	212	219	7
ENGNGF	671	100	716.4	710.8	0	5.7	671	100	5.6	0	1373	1417	44
ENGHON	246	100	248.4	248.4	0	0.0	246	100	0.0	0	491	505	14
Total	2607	98	3196.6	3185.8	0	26.5	2591	97	5.6	-16	6127	6262	135

Transportation Summary											
Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost	
ENG TG P Prod	2369.6	0.0	2369.6	7882.5	5512.9	0	5043	0	5043	2.1283	
ENG TG P 2 Stg	90.5	1.9	88.7	7882.5	7793.9	23	0	0	23	0.2572	
ENG TG P Long	6103.2	0.0	6103.2	8698.1	2594.9	0	0	0	0	0.0000	
ENG TG P BND	1143.7	7.1	1136.6	1139.5	3.0	98	267	0	365	0.3191	
ENG TG P Short	2799.5	23.8	2775.7	10262.0	7486.3	315	2688	0	3003	1.0727	
Tr Can Charges	787.1	9.1	778.1	1477.2	699.1	0	698	0	698	0.8862	
Iroq Charges	778.1	4.8	773.3	1460.0	686.7	69	640	0	709	0.9109	
ENG PNG TS	84.0	0.8	83.1	365.0	281.9	0	312	0	312	3.7155	
ENG LNG	219.9	0.0	219.9	8654.9	8435.0	0	0	0	0	0.0000	
ENG Propane	160.8	0.0	160.8	6335.0	6174.2	0	0	0	0	0.0000	
ENG C3 Truck	160.8	0.0	160.8	4380.0	4219.2	161	0	0	161	1.0000	
Dracut 30	3572.6	7.5	3565.1	10950.0	7384.9	155	4388	0	4543	1.2717	
Union Charges	796.2	9.1	787.1	1477.2	690.0	0	140	0	140	0.1758	
Dracut 20	1616.0	3.4	1612.6	7300.0	5687.4	70	1134	0	1204	0.7450	

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

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NOV 2021 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	2279.1	63.5	2215.6	9125.0	6909.4	678	0	0	678	0.2976
Z4toTGPLH	3921.0	33.3	3887.6	7665.0	3777.4	442	0	0	442	0.1126
Z4toStg	2736.3	9.0	2727.3	7882.5	5155.3	136	0	0	136	0.0495
Engie2CG	431.1	1.2	429.9	1057.0	627.1	14	0	0	14	0.0334
██████████	1177.4	2.5	1175.0	4034.9	2860.0	51	0	0	51	0.0434
██████████	310.2	9.3	300.9	2746.1	2445.1	0	0	0	0	0.0000
Repsol2Drac	4.3	0.1	4.2	15.9	11.7	0	0	0	0	0.0000
██████████	0.0	0.0	0.0	37777.5	37777.5	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	2920.0	2920.0	0	0	0	0	0.0000
Engie2ENGLNG	198.9	0.0	198.9	1057.0	858.1	199	0	0	199	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	904.2	14.4	889.8	1317.1	427.3	0	1330	0	1330	1.4712
██████████	889.8	13.3	876.5	1297.4	420.9	0	██████████	██████████	██████████	██████████
Total		214.1				2411	██████████	██████████	██████████	██████████

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Costs		Storage Costs		Transportation Costs		Peak Subperiod	
-----		-----		-----		-----	
Commodity Cost	306557	Injection Cost	237	Transportation Cost	11857	JAN 19, 2022	
Penalty Cost	0	Withdrawal Cost	228	Other Variable Cost	0	System Served	165.66
Other Variable Cost	135	Carrying Cost	0			System Unserved	0.00
		Other Variable Cost	0			Total	165.66
Total Variable	306692	Total Variable	465	Total Variable	11857		
Demand/Reservation Co	36853	Demand Cost	3477	Demand Cost	88388		
Other Fixed Cost	472	Other Fixed Cost	4865	Other Fixed Cost	0		
Total Fixed	37326	Total Fixed	8343	Total Fixed	88388		
Sup Release Revenue	0	Sto Release Revenue	0	Cap Release Revenue	0		
Net Supply Cost	344018	Net Storage Cost	8807	Net Trans Cost	100245	Total Gas Cost	453070
						Total Revenue	0
						Net Cost	453070

Avg Cost of Served Demand 5.213 USD/DT
(System Cost/Served Dem.)

Avg Cost of Gas Purchased 3.904 USD/DT
(Supply Cost/LDC Purchase)

Demand Summary										
Class	Demand Before DSM	DSM Impact	Net Demand	Imbal. Served	Demand After Unb.	Served	Unserved	Revenue	Peak Served	Peak Unserved
ENGIDesign	86917.0	0.0	86917.0	0.0	86917.0	86917.0	0.0	0	165.7	0.0
Total	86917.0	0.0	86917.0	0.0	86917.0	86917.0	0.0	0	165.7	0.0

Supply Summary

Source	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
ENGUSGC	11865.3	91300.0	79434.7			2.8716	34072	0	34072	2.8716
ENGNiagara	5722.2	5839.5	117.4			2.2009	12594	0	12594	2.2009
ENGPNGTS	420.2	420.2	0.0			4.0214	1690	0	1690	4.0214
ENG3Winter	445.8	458.7	12.9			15.0000	6687	0	6687	15.0000
ENG-Z4	33092.4	33460.3	367.9			2.0870	69064	0	69064	2.0870
Dracut 20	5589.1	36520.0	30930.9			5.6961	31836	0	31836	5.6961
ENG3Summer	345.5	467.3	121.8			10.0000	3455	0	3455	10.0000
DLiqSummer	105.0	105.0	0.0							
ENG Dawn	3904.9	10956.0	7051.1			2.9363	11466	0	11466	2.9363

933

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

Supply Summary										
Source (cont)	Total Take	Max Take	Surplus	Take Under Daily Min	Take Under Other Min	Av Comm Cost	Total Var Cost	Total Fix Cost	Net Cost	Average Net Cost
DAWN	4000.8	6695.8	2695.0			2.8921	11571	0	11571	2.8921
Repsol 40	1572.9	1572.9	0.0							
Dracut 30	17908.1	54780.0	36871.9			6.0476	108301	0	108301	6.0476
Engie Combo	3150.0	3150.0	0.0							
C/G SUPPLY	0.0	75.0	75.0			0.0000	0	0	0	0.0000
Total	88122.1						306692	37326	344018	

Storage Summary													
Storage	Starting Balance	% Full	Total Inj.	Total With.	NetInv Adj.	Inj Fuel	Final Balance	% Full	With. Fuel	Diff in Balance	Start Value	Final Value	Diff in Value
ENGLNG	13	100	1068.6	1069.2	0	0.0	12	95	0.0	-1	130	55	-75
ENGPropane	77	100	791.3	791.3	0	0.0	77	100	0.0	0	953	979	26
ENGFSMA	1482	95	8760.5	8666.7	0	93.7	1482	95	0.0	0	2573	3087	514
ENGDomion	103	100	560.3	549.3	0	10.9	103	100	0.0	0	178	219	41
ENGNGF	671	100	3570.1	3541.9	0	28.2	671	100	28.0	0	1164	1417	253
ENGHON	246	100	1238.3	1238.3	0	0.0	246	100	0.0	0	427	505	78
Total	2592	97	15989.1	15856.8	0	132.9	2591	97	28.0	-1	5426	6262	836

Transportation Summary

Segment	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPProd	11865.3	0.0	11865.3	39434.3	27569.0	0	25216	0	25216	2.1252
ENGTP2Stg	431.2	8.8	422.3	39434.3	39012.0	111	0	0	111	0.2572
ENGTPLong	30291.2	0.0	30291.2	43512.1	13220.8	0	0	0	0	0.0000
ENGTPBND	5722.2	35.5	5686.7	5700.8	14.1	488	1337	0	1825	0.3189
ENGTPShort	13968.3	118.7	13849.6	51338.0	37488.4	1573	13438	0	15012	1.0747
TrCanCharges	3860.4	44.4	3816.0	7389.8	3573.8	0	3488	0	3488	0.9035
IroqCharges	3816.0	23.7	3792.3	7304.0	3511.7	339	3199	0	3537	0.9270
ENGPNGTS	420.2	4.2	416.0	1826.0	1410.0	1	1559	0	1560	3.7122
ENGLNG	1069.2	0.0	1069.2	43298.1	42228.9	0	0	0	0	0.0000
ENGPropane	791.3	0.0	791.3	31710.0	30918.7	0	0	0	0	0.0000
ENG3Truck	791.3	0.0	791.3	21912.0	21120.7	791	0	0	791	1.0000
Dracut 30	16424.1	34.5	16389.6	54780.0	38390.4	713	21942	0	22655	1.3794
UnionCharges	3904.9	44.5	3860.4	7389.8	3529.4	0	700	0	700	0.1793
Dracut 20	7094.6	14.9	7079.7	36520.0	29440.3	308	5668	0	5976	0.8424

NOV 2017 thru OCT 2022

Cost and Flow Summary

Units: MDT, USD (000)

=====										
Transportation Summary										
Segment (cont)	Total Flow	Fuel Consumed	Delivered	Max Flow	Surplus	Var Cost	Fix Cost	Cap Rel Revenue	Net Cost	Average Net Cost
ENGTPZ4	11434.1	318.7	11115.4	45650.0	34534.6	3402	0	0	3402	0.2976
Z4toTGPH	19340.2	164.4	19175.8	38346.0	19170.2	2178	0	0	2178	0.1126
Z4toStg	13752.2	45.4	13706.8	39434.3	25727.4	681	0	0	681	0.0495
Engie2CG	2186.4	6.1	2180.2	5292.0	3111.8	73	0	0	73	0.0334
██████████	5382.4	11.3	5371.1	20185.8	14814.7	234	0	0	234	0.0434
Repsol2Drac	1550.8	46.5	1504.3	13737.8	12233.5	0	0	0	0	0.0000
██████████	22.1	0.7	21.5	79.5	58.1	0	0	0	0	0.0000
LNGtoLNG	0.0	0.0	0.0	188991.0	188991.0	0	0	0	0	0.0000
Engie2ENGLNG	963.6	0.0	963.6	5292.0	4328.4	964	0	0	964	1.0000
Dawn2Dracut	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0.0000
DAWNTCPL	4000.8	63.6	3937.2	6589.3	2652.1	0	6652	0	6652	1.6626
██████████	3937.2	59.1	3878.1	6490.5	2612.3	0	██████████	██████████	██████████	██████████
Total		1044.9				11857	██████████	██████████	██████████	██████████

RESOURCE MIX RESULTS

Units: MDT

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	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Supplies	DAWN	NOV 2017	OCT 2022	0.00	150.00	3.67
	Repsol 40	NOV 2017	OCT 2022	0.00	150.00	7.86
	Contract	Start Date	End Date	Min Level	Max Level	Result MDQ
	-----	-----	-----	-----	-----	-----
Segments		NOV 2017	OCT 2022	0.00	150.00	11.05
		NOV 2017	OCT 2022	0.00	150.00	7.52
	Repsol2Drac	NOV 2017	OCT 2022	0.00	50.00	0.11
	Dawn2Dracut	NOV 2017	OCT 2022	0.00	50.00	0.00
	DAWNTCPL	NOV 2017	OCT 2022	0.00	150.00	3.61
		NOV 2017	OCT 2022	0.00	150.00	3.55

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Forecast Demand													
ENGIDesign	1606.1	2680.7	3168.6	2734.6	2304.0	1326.8	696.3	416.9	315.9	314.2	397.7	779.2	16741.0
Total Demand	1606.1	2680.7	3168.6	2734.6	2304.0	1326.8	696.3	416.9	315.9	314.2	397.7	779.2	16741.0
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	28.1	31.3	35.4	31.3	27.3	15.1	7.7	4.8	4.2	4.2	4.7	9.9	203.9
Injection	3.0	0.0	0.0	0.0	0.0	0.6	2.0	4.0	5.1	5.1	4.4	2.3	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	31.4	32.6	36.9	32.5	28.5	15.7	9.7	8.8	9.3	9.3	9.1	12.3	236.1
Storage Injections													
ENGLNG	2.9	35.4	46.5	67.0	34.3	0.0	7.1	2.9	0.0	0.0	8.7	2.3	207.1
ENGPropane	0.0	0.0	46.4	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	150.1
ENGFSMA	238.5	0.0	0.0	0.0	0.0	0.0	118.9	280.4	316.3	319.0	293.9	169.4	1736.4
ENGDominion	8.2	0.0	0.0	0.0	0.0	6.4	1.8	6.5	27.3	28.3	21.5	9.1	109.2
ENGNGF	36.9	0.0	0.0	0.0	0.0	58.4	89.1	110.2	137.3	135.9	98.3	41.6	707.7
ENGHON	31.5	0.0	0.0	0.0	0.0	16.0	33.3	36.8	39.0	41.2	34.0	14.4	246.2
Total Inj	318.0	35.4	92.9	101.6	34.3	80.8	261.8	448.3	531.4	536.0	468.0	248.3	3156.8
Total Req	1955.4	2748.7	3298.5	2868.7	2366.8	1423.3	967.9	874.1	856.5	859.5	874.7	1039.8	20133.9
=====													
Sources of Supply													
ENGUSGC	613.7	426.2	426.2	385.0	398.7	86.0	7.8	0.0	0.0	0.0	0.0	27.5	2371.2
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	46.4	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.0
ENG-Z4	249.0	257.3	257.3	232.4	257.3	711.6	787.6	759.0	741.3	744.3	753.3	787.6	6538.1
Dracut 20	99.7	263.5	265.6	95.0	168.7	25.5	0.0	0.0	0.0	0.0	0.0	0.0	918.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGDAWN	117.4	126.9	126.9	114.6	118.7	89.0	19.9	0.0	0.0	0.0	0.0	46.6	760.0
DAWN	107.8	113.7	113.7	102.7	106.3	96.6	25.7	0.0	0.0	0.0	0.0	52.0	718.4
Repsol 40	0.0	46.1	141.0	111.4	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.6
Dracut 30	422.5	556.4	721.5	746.1	574.2	310.8	3.0	0.0	0.0	0.0	0.0	5.6	3340.1
Engie Combo	2.9	161.0	172.9	190.8	102.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1715.5	2059.6	2381.1	2110.9	1849.6	1420.4	964.9	871.2	853.6	856.6	871.9	1036.8	16992.2

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2017	DEC 2017	JAN 2018	FEB 2018	MAR 2018	APR 2018	MAY 2018	JUN 2018	JUL 2018	AUG 2018	SEP 2018	OCT 2018	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	35.4	57.6	67.0	24.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	207.7
ENGPropane	0.0	0.0	115.5	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	150.1
ENGFSMA	160.5	393.4	465.6	420.3	281.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1720.8
ENGDominion	8.2	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.2
ENGNGF	36.9	172.4	189.0	158.5	150.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	707.7
ENGHON	31.5	59.9	60.7	53.2	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	246.2
Total With	239.9	689.1	917.4	757.8	517.2	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3141.7
=====													
Total Supply	1955.4	2748.7	3298.5	2868.7	2366.8	1423.3	967.9	874.1	856.5	859.5	874.7	1039.8	20133.9
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	13	13	13	2	2	12	9	13	13	10	7	13	13
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1482	1560	1167	701	281	0	0	119	399	716	1035	1329	1482
ENGDominion	103	103	75	46	22	2	8	10	16	44	72	94	103
ENGNGF	671	671	498	309	151	0	58	147	258	395	531	629	671
ENGHON	246	246	186	126	73	32	48	81	118	157	198	232	246
Total Inv	2592	2670	2016	1192	536	53	131	389	835	1363	1896	2362	2592
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
Forecast Demand													
ENGIDesign	1631.6	2728.1	3216.3	2781.1	2342.0	1343.8	708.1	427.7	326.4	327.7	414.0	796.5	17043.3
Total Demand	1631.6	2728.1	3216.3	2781.1	2342.0	1343.8	708.1	427.7	326.4	327.7	414.0	796.5	17043.3
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	28.5	31.5	35.3	31.2	28.1	15.4	7.8	4.8	4.3	4.3	4.8	10.2	206.3
Injection	3.0	0.0	0.0	0.0	0.0	0.9	2.3	4.0	5.0	5.1	4.2	2.2	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	31.7	32.9	36.8	32.5	29.3	16.3	10.1	8.9	9.2	9.4	8.9	12.4	238.4
Storage Injections													
ENGLNG	3.5	39.6	45.2	67.0	34.8	0.0	7.1	2.9	0.0	0.0	8.7	2.3	211.2
ENGPropane	0.0	0.0	54.9	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	158.6
ENGFSMA	239.4	0.0	0.0	0.0	0.0	0.0	124.5	267.9	315.7	319.0	299.2	171.6	1737.4
ENGDominion	8.2	0.0	0.0	0.0	0.0	11.9	6.8	6.7	22.6	27.8	15.3	9.8	109.2
ENGNGF	32.3	0.0	0.0	0.0	0.0	78.6	98.3	125.0	136.9	132.6	80.0	19.3	703.1
ENGHON	33.4	0.0	0.0	0.0	0.0	34.5	5.3	24.2	41.3	41.3	40.0	28.0	248.1
Total Inj	316.8	39.6	100.1	101.6	34.8	125.0	253.6	438.3	528.1	532.3	454.8	242.6	3167.6
Total Req	1980.2	2800.7	3353.2	2915.2	2406.1	1485.1	971.8	874.9	863.7	869.3	877.7	1051.5	20449.3
Sources of Supply													
ENGUSGC	615.2	426.2	426.2	385.0	412.5	87.1	8.9	0.0	0.0	0.0	0.0	32.7	2393.9
ENGNiagara	94.2	97.4	97.4	88.0	97.4	94.2	97.4	94.2	97.4	97.4	94.2	97.4	1146.6
ENGPNCTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	54.9	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.5
ENG-Z4	249.0	257.3	257.3	232.4	257.3	756.8	787.6	759.8	748.5	754.1	756.3	787.6	6604.0
Dracut 20	98.9	267.8	297.6	136.2	158.6	30.9	0.0	0.0	0.0	0.0	0.0	0.0	990.0
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	0.0	0.0	8.7	2.3	21.0
ENGdawn	122.8	126.9	126.9	114.6	122.8	90.1	22.0	0.0	0.0	0.0	0.0	48.0	774.2
DAWN	110.0	113.7	113.7	102.7	110.0	98.2	25.7	0.0	0.0	0.0	0.0	53.7	727.7
Repsol 40	0.0	47.2	136.5	110.1	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.6
Dracut 30	424.5	574.5	741.4	769.0	597.1	318.1	3.6	0.0	0.0	0.0	0.0	9.0	3437.2
Engie Combo	3.5	157.6	172.9	190.8	105.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1726.4	2079.5	2437.0	2173.7	1891.5	1482.2	968.9	872.0	860.7	866.4	874.8	1048.6	17281.8

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2018	DEC 2018	JAN 2019	FEB 2019	MAR 2019	APR 2019	MAY 2019	JUN 2019	JUL 2019	AUG 2019	SEP 2019	OCT 2019	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	39.6	56.3	67.0	25.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	211.2
ENGPropane	0.0	0.0	124.0	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	158.6
ENGFSMA	177.0	418.1	457.2	404.1	281.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1737.4
ENGDominion	8.2	28.0	29.0	24.1	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.2
ENGNGF	32.3	175.5	189.0	158.5	147.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	703.1
ENGHON	33.4	59.9	60.7	53.2	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	248.1
Total With	253.8	721.1	916.2	741.5	514.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3167.6
Total Supply	1980.2	2800.7	3353.2	2915.2	2406.1	1485.1	971.8	874.9	863.7	869.3	877.7	1051.5	20449.3
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	10	7	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1142	685	281	0	0	124	392	708	1027	1326	1498
ENGDominion	103	103	75	46	22	2	14	20	27	50	78	93	103
ENGNGF	671	671	495	306	148	0	79	177	302	439	571	651	671
ENGHON	246	246	186	126	73	32	66	71	96	137	178	218	246
Total Inv	2607	2670	1988	1172	533	53	175	425	861	1386	1915	2367	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
Forecast Demand													
ENGIDesign	1662.8	2759.9	3253.2	2909.6	2367.6	1367.7	723.4	440.8	338.4	344.1	432.2	831.2	17430.8
Total Demand	1662.8	2759.9	3253.2	2909.6	2367.6	1367.7	723.4	440.8	338.4	344.1	432.2	831.2	17430.8
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	28.6	31.5	35.0	32.6	27.8	15.6	9.7	4.9	4.4	4.4	4.9	9.7	209.1
Injection	3.1	0.0	0.0	0.0	0.0	0.9	2.7	3.8	4.9	5.0	4.1	2.1	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	32.0	32.9	36.5	33.9	28.9	16.5	12.4	8.8	9.2	9.5	9.0	11.7	241.3
Storage Injections													
ENGLNG	3.5	42.9	44.0	67.0	35.5	0.0	7.1	2.9	2.9	0.0	5.8	2.3	213.9
ENGPropane	0.0	0.0	57.1	34.6	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	238.9	0.0	0.0	0.0	0.0	0.0	176.1	257.0	313.1	319.0	293.6	139.1	1736.9
ENGDominion	8.2	0.0	0.0	0.0	0.0	10.4	5.5	2.7	20.6	28.3	22.4	11.8	109.8
ENGNGF	38.8	0.0	0.0	0.0	0.0	88.3	85.9	127.6	136.5	126.8	65.1	40.5	709.6
ENGHON	33.4	0.0	0.0	0.0	0.0	29.3	14.7	24.3	41.3	41.3	37.7	26.1	248.1
Total Inj	322.9	42.9	101.1	101.6	35.5	128.0	300.8	425.9	526.0	527.0	436.1	231.2	3179.1
Total Req	2017.6	2835.8	3390.8	3045.1	2431.9	1512.2	1036.6	875.5	873.6	880.5	877.3	1074.2	20851.2
Sources of Supply													
ENGUSGC	617.7	426.2	426.2	398.7	398.7	88.9	11.3	0.0	0.0	0.0	0.0	0.0	2367.9
ENGNiagara	94.2	97.4	97.4	91.1	97.4	92.3	97.4	92.5	97.4	97.4	90.9	97.4	1142.8
ENGPNCTS	8.3	11.0	12.2	10.8	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.3
ENG3Winter	0.0	0.0	57.1	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	240.7	257.3	762.2	787.6	762.2	755.5	765.3	762.2	787.6	6644.3
Dracut 20	116.9	281.5	317.3	141.2	198.7	38.5	0.0	0.0	0.0	0.0	0.0	0.0	1094.1
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	0.0	5.8	2.3	21.0
ENGDAWN	122.8	126.9	126.9	118.7	122.8	92.6	23.9	0.0	0.0	0.0	0.0	50.8	785.4
DAWN	110.0	113.7	113.7	106.3	110.0	99.7	85.4	0.0	0.0	0.0	0.0	57.3	796.1
Repsol 40	0.0	47.8	124.8	118.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.6
Dracut 30	435.3	604.6	770.1	814.8	615.1	328.3	4.5	0.0	0.0	0.0	0.0	58.0	3630.7
Engie Combo	3.5	160.6	170.4	188.1	107.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1757.8	2127.0	2473.4	2263.1	1941.2	1509.4	1033.7	872.7	870.7	877.6	874.5	1071.2	17672.1

33

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2019	DEC 2019	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUN 2020	JUL 2020	AUG 2020	SEP 2020	OCT 2020	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	42.9	55.0	67.0	25.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	213.9
ENGPropane	0.0	0.0	126.2	34.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	176.5	401.5	457.5	435.8	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1736.9
ENGDominion	8.2	28.0	29.0	25.0	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	109.8
ENGNGF	38.8	177.6	189.0	164.6	139.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	709.6
ENGHON	33.4	58.7	60.7	55.0	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	248.1
Total With	259.8	708.7	917.4	782.1	490.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3179.1
=====													
Total Supply	2017.6	2835.8	3390.8	3045.1	2431.9	1512.2	1036.6	875.5	873.6	880.5	877.3	1074.2	20851.2
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	10	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1159	701	266	0	0	176	433	746	1065	1359	1498
ENGDominion	103	103	75	46	21	1	12	17	20	40	69	91	103
ENGNGF	671	671	493	304	140	0	88	174	302	438	565	630	671
ENGHON	246	246	188	127	72	32	61	76	100	141	182	220	246
Total Inv	2607	2670	2004	1188	507	52	177	475	898	1421	1945	2379	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Forecast Demand													
ENGIDesign	1701.0	2811.3	3300.6	2851.2	2401.6	1393.2	738.7	452.5	349.2	357.0	450.6	860.0	17666.8
Total Demand	1701.0	2811.3	3300.6	2851.2	2401.6	1393.2	738.7	452.5	349.2	357.0	450.6	860.0	17666.8
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	28.8	31.8	35.2	31.4	28.0	15.8	10.6	5.2	5.0	4.5	5.0	9.9	211.4
Injection	3.1	0.0	0.0	0.0	0.0	0.9	2.9	4.0	5.1	4.9	3.8	1.9	26.6
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	32.2	33.3	36.7	32.7	29.1	16.8	13.5	9.3	10.1	9.4	8.7	11.8	243.6
Storage Injections													
ENGLNG	3.5	46.4	42.3	67.0	36.4	0.0	7.1	2.9	2.9	2.9	2.9	2.3	216.6
ENGPropane	0.0	0.0	61.6	30.1	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	238.2	0.0	0.0	0.0	0.0	0.0	227.8	301.3	319.0	305.4	235.3	109.1	1736.2
ENGDominion	9.6	0.0	0.0	0.0	0.0	10.1	2.9	9.4	28.3	26.0	15.5	8.8	110.6
ENGNGF	39.9	0.0	0.0	0.0	0.0	93.1	47.6	71.3	137.5	137.5	114.1	69.7	710.7
ENGHON	34.0	0.0	0.0	0.0	0.0	24.9	19.7	27.5	41.3	41.3	37.6	21.3	247.6
Total Inj	325.3	46.4	103.9	97.1	36.4	128.0	316.6	423.8	540.7	524.8	416.9	222.7	3182.6
Total Req	2058.5	2890.9	3441.2	2981.0	2467.1	1538.0	1068.8	885.6	900.0	891.2	876.2	1094.6	21093.0
=====													
Sources of Supply													
ENGUSGC	621.3	426.2	426.2	385.0	398.7	90.8	14.2	0.0	0.0	0.0	0.0	0.0	2362.6
ENGNiagara	94.2	97.4	97.4	88.0	97.4	92.7	97.4	93.1	97.4	97.4	92.7	97.4	1142.4
ENGPNGTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	61.6	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	760.6	773.0	762.2	787.6	6648.8
Dracut 20	152.2	297.3	329.8	184.5	212.7	46.9	0.0	0.0	0.0	0.0	0.0	0.0	1223.4
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	95.4	25.2	0.0	0.0	0.0	0.0	54.4	789.0
DAWN	110.0	113.7	113.7	102.7	110.0	101.2	112.5	9.5	21.2	0.0	0.0	59.9	854.3
Repsol 40	0.0	50.8	125.5	110.1	28.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.6
Dracut 30	434.9	617.4	793.3	792.9	624.1	339.1	5.4	0.0	0.0	0.0	0.0	72.3	3679.5
Engie Combo	3.5	162.5	172.0	181.1	110.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1796.3	2160.6	2516.0	2231.8	1971.8	1535.1	1065.8	882.7	897.0	888.2	873.3	1091.6	17910.4

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEP 2021	OCT 2021	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	46.4	53.4	67.0	26.6	2.9	2.9	2.9	2.9	2.9	2.9	2.9	216.6
ENGPropane	0.0	0.0	130.7	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	175.8	416.0	462.5	416.4	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1736.2
ENGDominion	9.6	28.2	29.0	23.9	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.6
ENGNGF	39.9	180.9	189.0	158.5	142.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	710.7
ENGHON	34.0	58.8	60.7	53.2	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.6
Total With	262.2	730.3	925.2	749.2	495.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3182.6
Total Supply	2058.5	2890.9	3441.2	2981.0	2467.1	1538.0	1068.8	885.6	900.0	891.2	876.2	1094.6	21093.0
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1144	682	266	0	0	228	529	848	1154	1389	1498
ENGDominion	103	103	74	46	22	2	12	15	24	52	78	94	103
ENGNGF	671	671	490	301	142	0	93	141	212	349	487	601	671
ENGHON	246	246	187	127	74	33	57	77	105	146	187	225	246
Total Inv	2607	2670	1986	1165	513	54	179	493	914	1451	1973	2387	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Forecast Demand													
ENGIDesign	1739.6	2864.3	3359.7	2901.4	2444.1	1420.9	754.6	464.3	359.1	369.8	467.4	889.9	18035.1
Total Demand	1739.6	2864.3	3359.7	2901.4	2444.1	1420.9	754.6	464.3	359.1	369.8	467.4	889.9	18035.1
Forecast Rt Mrktr Imbalance													
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed													
Transport	28.9	32.2	35.3	31.2	28.2	16.1	10.8	6.4	5.3	4.6	5.1	10.2	214.1
Injection	3.1	0.0	0.0	0.0	0.0	1.0	2.9	4.2	5.1	4.8	3.5	1.8	26.5
Withdrawal	0.3	1.4	1.5	1.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6
Total Fuel	32.3	33.7	36.8	32.4	29.3	17.1	13.7	10.6	10.4	9.4	8.5	12.0	246.2
Storage Injections													
ENGLNG	3.5	48.7	42.1	67.0	37.6	0.0	7.1	2.9	2.9	2.9	2.9	2.3	219.9
ENGPropane	0.0	0.0	61.7	30.1	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	160.8
ENGFSMA	237.4	0.0	0.0	0.0	0.0	0.0	219.6	305.8	319.0	309.5	222.6	105.8	1719.8
ENGDominion	10.1	0.0	0.0	0.0	0.0	15.5	12.6	13.7	28.3	17.9	3.3	9.1	110.5
ENGNGF	40.0	0.0	0.0	0.0	0.0	87.1	39.2	83.4	137.5	134.6	125.2	63.7	710.8
ENGHON	34.8	0.0	0.0	0.0	0.0	25.3	16.1	33.2	41.3	40.0	35.3	22.5	248.4
Total Inj	325.8	48.7	103.8	97.1	37.6	127.9	306.1	450.5	540.7	516.4	400.8	214.9	3170.2
Total Req	2097.7	2946.7	3500.3	3030.8	2511.0	1565.9	1074.3	925.5	910.2	895.5	876.7	1116.8	21451.4
=====													
Sources of Supply													
ENGUSGC	623.7	426.2	426.2	385.0	398.7	92.9	16.9	0.0	0.0	0.0	0.0	0.0	2369.6
ENGNiagara	94.2	97.4	97.4	88.0	97.4	93.1	97.4	93.4	97.4	97.4	93.2	97.4	1143.7
ENGPNGTS	8.3	11.0	12.2	10.4	9.7	6.8	4.9	3.6	3.3	3.4	4.0	6.3	84.0
ENG3Winter	0.0	0.0	61.7	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.7
ENG-Z4	249.0	257.3	257.3	232.4	257.3	762.2	787.6	762.2	764.7	777.4	762.2	787.6	6657.2
Dracut 20	151.9	308.3	369.4	245.3	231.8	57.0	0.0	0.0	0.0	0.0	0.0	0.0	1363.7
ENG3Summer	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	11.5	11.5	11.5	11.5	69.1
DLiqSummer	0.0	0.0	0.0	0.0	0.0	0.0	7.1	2.9	2.9	2.9	2.9	2.3	21.0
ENG Dawn	122.8	126.9	126.9	114.6	122.8	97.8	26.5	0.0	0.0	0.0	0.0	57.9	796.2
DAWN	110.0	113.7	113.7	102.7	110.0	102.8	112.8	49.0	27.3	0.0	0.1	62.1	904.2
Repsol 40	0.0	55.2	124.1	103.9	31.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	314.6
Dracut 30	471.5	635.6	806.2	820.3	641.2	350.4	6.7	0.0	0.0	0.0	0.0	88.8	3820.7
Engie Combo	3.5	156.7	172.9	181.1	115.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	630.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	1835.0	2188.3	2567.8	2313.8	2016.2	1563.0	1071.4	922.6	907.2	892.6	873.9	1113.9	18265.7

337

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	NOV 2021	DEC 2021	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	SEP 2022	OCT 2022	Total
=====													
Storage Withdrawals													
ENGLNG	2.9	48.7	53.2	67.0	27.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	219.9
ENGPropane	0.0	0.0	130.8	30.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	160.8
ENGFSMA	175.0	438.2	469.9	386.8	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1735.4
ENGDominion	10.1	28.1	29.0	23.2	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.5
ENGNGF	40.0	182.9	189.0	158.5	140.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	710.8
ENGHON	34.8	60.5	60.7	51.5	41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	248.4
Total With	262.7	758.4	932.5	717.1	494.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3185.8
Total Supply	2097.7	2946.7	3500.3	3030.8	2511.0	1565.9	1074.3	925.5	910.2	895.5	876.7	1116.8	21451.4
=====													
Net Storage Inv. Adj.													
ENGLNG	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0	0	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0	0	0	0	0	0	0	0
=====													
Start of Month Inventory													
ENGLNG	12	13	13	2	2	12	9	13	13	13	13	13	12
ENGPropane	77	77	77	8	8	8	8	19	31	42	54	65	77
ENGFSMA	1498	1560	1122	652	266	0	0	220	525	844	1154	1377	1498
ENGDominion	103	103	75	46	22	2	18	30	44	72	90	94	103
ENGNGF	671	671	488	299	140	0	87	126	210	347	482	607	671
ENGHON	246	246	186	125	74	33	58	74	107	149	188	224	246
Total Inv	2607	2670	1960	1131	511	54	179	483	930	1468	1981	2379	2607
=====													
Unsupplied Demand													
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

Ventyx
SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Forecast Demand						
ENGIDesign	16741.0	17043.3	17430.8	17666.8	18035.1	86917.0
Total Demand	16741.0	17043.3	17430.8	17666.8	18035.1	86917.0
Forecast Rt Mrktr Imbalance						
Total Imbal	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Consumed						
Transport	203.9	206.3	209.1	211.4	214.1	1044.9
Injection	26.6	26.6	26.6	26.6	26.5	132.9
Withdrawal	5.6	5.6	5.6	5.6	5.6	28.0
Total Fuel	236.1	238.4	241.3	243.6	246.2	1205.7
Storage Injections						
ENGLNG	207.1	211.2	213.9	216.6	219.9	1068.6
ENGPropane	150.1	158.6	160.8	160.8	160.8	791.3
ENGFSMA	1736.4	1737.4	1736.9	1736.2	1719.8	8666.7
ENGDominion	109.2	109.2	109.8	110.6	110.5	549.3
ENGNGF	707.7	703.1	709.6	710.7	710.8	3541.9
ENGHON	246.2	248.1	248.1	247.6	248.4	1238.3
Total Inj	3156.8	3167.6	3179.1	3182.6	3170.2	15856.2
Total Req	20133.9	20449.3	20851.2	21093.0	21451.4	103978.9
=====						
Sources of Supply						
ENGUSGC	2371.2	2393.9	2367.9	2362.6	2369.6	11865.3
ENGNiagara	1146.6	1146.6	1142.8	1142.4	1143.7	5722.2
ENGPNGTS	84.0	84.0	84.3	84.0	84.0	420.2
ENG3Winter	81.0	89.5	91.7	91.7	91.7	445.8
ENG-Z4	6538.1	6604.0	6644.3	6648.8	6657.2	33092.4
Dracut 20	918.0	990.0	1094.1	1223.4	1363.7	5589.1
ENG3Summer	69.1	69.1	69.1	69.1	69.1	345.5
DLiqSummer	21.0	21.0	21.0	21.0	21.0	105.0
ENGDAWN	760.0	774.2	785.4	789.0	796.2	3904.9
DAWN	718.4	727.7	796.1	854.3	904.2	4000.8
Repsol 40	314.6	314.6	314.6	314.6	314.6	1572.9
Dracut 30	3340.1	3437.2	3630.7	3679.5	3820.7	17908.1
Engie Combo	630.0	630.0	630.0	630.0	630.0	3150.0
C/G SUPPLY	0.0	0.0	0.0	0.0	0.0	0.0
Total Take	16992.2	17281.8	17672.1	17910.4	18265.7	88122.1

339

APPENDIX 6.F.2 LOW GROWTH DESIGN YEAR MONTHLY REQUIREMENTS

Scen 1332 Design Case Low Fix E RMix RD
- Draw 0

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SENDOUT® Version 14.1.1 REP 13 15-Sep-2017
Report 13 (Continued) 08:29:31

Natural Gas Supply VS. Requirements

Units: MDT

	2017	2018	2019	2020	2021	Total
=====						
Storage Withdrawals						
ENGLNG	207.7	211.2	213.9	216.6	219.9	1069.2
ENGPropane	150.1	158.6	160.8	160.8	160.8	791.3
ENGFSMA	1720.8	1737.4	1736.9	1736.2	1735.4	8666.7
ENGDominion	109.2	109.2	109.8	110.6	110.5	549.3
ENGNGF	707.7	703.1	709.6	710.7	710.8	3541.9
ENGHON	246.2	248.1	248.1	247.6	248.4	1238.3
Total With	3141.7	3167.6	3179.1	3182.6	3185.8	15856.8
=====						
Total Supply	20133.9	20449.3	20851.2	21093.0	21451.4	103978.9
=====						
Net Storage Inv. Adj.						
ENGLNG	0	0	0	0	0	0
ENGPropane	0	0	0	0	0	0
ENGFSMA	0	0	0	0	0	0
ENGDominion	0	0	0	0	0	0
ENGNGF	0	0	0	0	0	0
ENGHON	0	0	0	0	0	0
Total Inv Adj	0	0	0	0	0	0
=====						
Start of Year Inventory						
ENGLNG	13	12	12	12	12	13
ENGPropane	77	77	77	77	77	77
ENGFSMA	1482	1498	1498	1498	1498	1482
ENGDominion	103	103	103	103	103	103
ENGNGF	671	671	671	671	671	671
ENGHON	246	246	246	246	246	246
Total Inv	2592	2607	2607	2607	2607	2592
=====						
Unsupplied Demand						
ENGIDesign	0.0	0.0	0.0	0.0	0.0	0.0
Total Unsupp	0.0	0.0	0.0	0.0	0.0	0.0

Peak Subperiod Demand Forecast by Class

JAN 19, 2018		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	155.3		
ThirtyDay			
TOTAL	155.3		

Peak Subperiod Demand Summary

JAN 19, 2018

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	155.3	155.3	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	155.3	155.3	0.0

JAN 19, 2018

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	155.3		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			9	11	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			934	60	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		383	57	ENGTGPShort	28.11	0.24
			Dracut 20	4.37	ENGHON		1.96			149	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	3.67								ENGPropane	34.60	
			Repsol 40	7.86								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	4.40	0.01
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													11.05	0.02
													7.52	0.23
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	3.61	0.06
													3.55	0.05
Total	155.3		Total	88.58	Total		68.10	0.05		1534		Total		1.30

Peak Subperiod Demand Forecast by Class

JAN 19, 2019		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	157.9		
ThirtyDay			
TOTAL	157.9		

Peak Subperiod Demand Summary

JAN 19, 2019

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	157.9	157.9	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	157.9	157.9	0.0

JAN 19, 2019

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	157.9		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			11	14	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			918	59	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		379	57	ENGTGPShort	28.11	0.24
			Dracut 20	6.95	ENGHON		1.96			149	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	3.67								ENGPropane	34.60	
			Repsol 40	7.86								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	6.98	0.01
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													11.05	0.02
													7.52	0.23
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	3.61	0.06
													3.55	0.05
Total	157.9		Total	91.16	Total		68.10	0.05		1516		Total		1.31

Peak Subperiod Demand Forecast by Class

JAN 19, 2020		Daily System Activity	Units: MDT
=====			
AREA	ENGIDesign		
ENGIDemand	159.9		
ThirtyDay			
TOTAL	159.9		

Peak Subperiod Demand Summary

JAN 19, 2020

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	159.9	159.9	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	159.9	159.9	0.0

JAN 19, 2020

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	159.9		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			13	17	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			934	60	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		377	56	ENGTGPShort	28.11	0.24
			Dracut 20	8.97	ENGHON		1.96			150	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	3.67								ENGPropane	34.60	
			Repsol 40	7.86								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	8.99	0.02
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													11.05	0.02
													7.52	0.23
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	3.61	0.06
													3.55	0.05
Total	159.9		Total	93.18	Total		68.10	0.05		1534		Total		1.31

Peak Subperiod Demand Forecast by Class

JAN 19, 2021		Daily System Activity	Units: MDT
AREA		ENGIDesign	
ENGIDemand		162.5	
ThirtyDay			
TOTAL		162.5	

Peak Subperiod Demand Summary

JAN 19, 2021

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	162.5	162.5	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	162.5	162.5	0.0

JAN 19, 2021

Daily System Activity

Units: MDT

Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	162.4		ENGUSGC	13.75	ENGLNG		11.10			2	15	ENGTGPPProd	13.75	
			ENGNiagara	3.14	ENGPropane		28.60			15	20	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			915	59	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		374	56	ENGTGPShort	28.11	0.24
			Dracut 20	11.54	ENGHON		1.96			150	61	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	11.10	
			DAWN	3.67								ENGPropane	34.60	
			Repsol 40	7.86								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	11.56	0.02
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													11.05	0.02
													7.52	0.23
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	3.61	0.06
													3.55	0.05
Total	162.4		Total	95.75	Total		68.10	0.05		1513		Total		1.31

Peak Subperiod Demand Forecast by Class

JAN 19, 2022		Daily System Activity	Units: MDT
AREA		ENGIDesign	
ENGIDemand		165.7	
ThirtyDay			
TOTAL		165.7	

Peak Subperiod Demand Summary

JAN 19, 2022

Daily System Activity

Units: MDT

AREA	FORECAST	TOTAL SERVED	TOTAL UNSERVED
	TOTAL DEMAND		
ENGIDemand	165.7	165.7	0.0
ThirtyDay	0.0	0.0	0.0
TOTAL	165.7	165.7	0.0

JAN 19, 2022			Daily System Activity										Units: MDT	
Demand	Suppl.	Unsup.	Supplies	Take	Storages	Adj (-With)	With. (-Inj)	With Fuel	Inj Fuel	Ending Inv.	% Full	Transport	Deliv.	Fuel
--- Served ---														
ENGIDesign	165.6		ENGUSGC	13.75	ENGLNG		10.91			2	16	ENGTGPPProd	13.75	
			ENGniagara	3.14	ENGPropane		23.52			27	35	ENGTGP2Stg		
			ENGPNGTS	0.39	ENGFSMA		19.42			885	57	ENGTGPLong	21.60	
			ENG3Winter	6.00	ENGDominion		0.93			57	55	ENGTGPBND	3.12	0.02
			ENG-Z4	8.30	ENGNGFG		6.10	0.05		372	55	ENGTGPShort	28.11	0.24
			Dracut 20	20.00	ENGHON		1.96			149	60	TrCanCharges	4.00	0.05
			ENG3Summer									IroqCharges	3.98	0.02
			DLiqSummer									ENGPNGTS	0.39	0.00
			ENGdawn	4.09								ENGLNG	10.91	
			DAWN	3.67								ENGPropane	29.52	
			Repsol 40	7.86								ENG3Truck	6.00	
			Dracut 30	30.00								Dracut 30	30.00	0.06
			Engie Combo	7.00								UnionCharges	4.05	0.05
			C/G SUPPLY									Dracut 20	20.00	0.04
												ENGTGPZ4	13.37	0.38
												Z4toTGPLH	8.23	0.07
												Z4toStg		
												Engie2CG	6.98	0.02
													11.05	0.02
													7.52	0.23
												Repsol2Drac	0.11	0.00
												LNGtoLNG		
												Engie2ENGLNG		
												Dawn2Dracut		
												DAWNTCPL	3.61	0.06
													3.55	0.05
Total	165.6		Total	104.2	Total		62.83	0.05		1492		Total		1.33