



Final Draft 2018 Annual Energy Forecast & Draft 2018 Summer Peak Forecast for Region and States

NEPOOL Load Forecast Committee

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SENIOR LOAD FORECASTING ANALYST



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Introduction

- The ISO has developed final draft 2018 gross energy forecasts and draft 2018 gross summer peak forecasts for discussion with the Load Forecast Committee (LFC)
- Same as past years, the ISO uses reconstituted loads in its forecast models to estimate both gross annual energy and gross peak demand
 - Reconstitution includes load reductions from passive demand resources (PDR), price responsive demand resources (PRD), behind-the-meter photovoltaics (BTM PV), and Real Time Demand Resources (RTDR) during Operating Procedure #4 (OP-4)*
 - The term “gross” load implies reconstitution
 - The term “net” load implies net of PDR, PRD and BTM PV and is representative of demand observed in real-time
- Gross summer peak forecasts described herein are draft and subject to change

* Includes RTDR dispatch during OP-4 Action 2 and audit events



2018 Load Forecast Development Timeline

- Activities completed to date
 - October 2017 – Received Moody’s Macroeconomic Forecast
 - November 2017 – Published Moody’s forecast to LFC website
 - https://www.iso-ne.com/static-assets/documents/2017/11/econ_variable_comp_2017fcst_vs_2016fcst.xlsx
 - November 16, 2017 – Moody’s presentation at Planning Advisory Committee (PAC)
 - https://www.iso-ne.com/static-assets/documents/2017/11/a3_moody_2017_economic_update.pdf
 - December 2017 – ISO published Summer 2017 Weather Normal Peak Load report
 - <https://www.iso-ne.com/isoexpress/web/reports/load-and-demand/-/tree/summer-and-winter-normalized-peaks>
 - December 13, 2017 – Moody’s forecast, draft energy forecast, 2017 summer peak review
 - https://www.iso-ne.com/static-assets/documents/2017/12/2018_prelim_energy.pdf
- LFC meetings
 - **TODAY** – Final draft energy forecast and draft summer peak forecast
 - March 28, 2018 – Final draft seasonal peak forecasts
 - July 2018 – Summer LFC meeting (date TBD)
- PAC meetings
 - March 14, 2018
 - April 26, 2018
- May 1, 2018 – Final forecast published in 2018 CELT report



FINAL DRAFT 2018 GROSS ENERGY FORECAST

New England and States

2018 Final Gross Energy Forecast

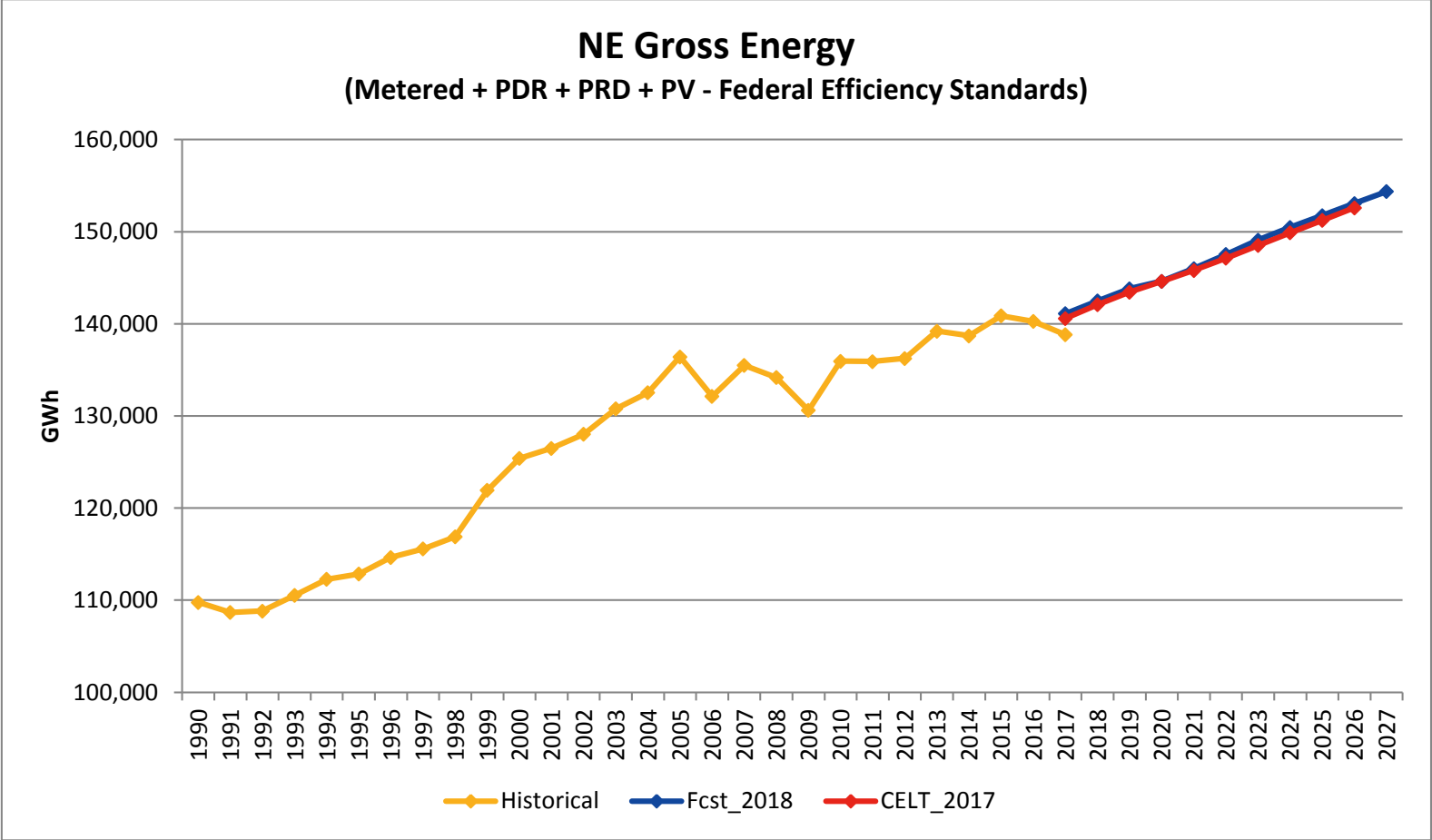
- No changes were made to the methodology used for the preliminary energy forecasts since it was presented at the December 13, 2017 LFC meeting
 - Energy models were estimated using reconstituted annual energy from 1990-2017 (28 years)
 - Energy models use the updated Moody's macroeconomic forecast published in October 2017
 - The ISO assumes normal weather for the energy forecast
 - Normal weather is defined as the 20 year average from 1996-2015
- Actual data are now available, and were used to re-estimate energy models
 - Monthly energy (November-December 2017)
 - BTM PV reconstitution data (September-December 2017)
 - PDR reconstitution data (November-December 2017)
- Preliminary net energy forecast values are based on the 2017 Energy Efficiency (EE) and BTM PV forecasts
- The annual energy forecast is an input into the peak demand model
- Final gross energy model statistics are included in the Appendix of this presentation

Observations on Final Draft 2018 Energy Forecast

- The final draft energy forecast for the region changed less than 0.1% from the preliminary draft energy forecast presented to the LFC on December 13, 2017
- Moody's forecasts roughly the same economic growth in the region (2017-2026 CAGR of 1.95%) relative to their previous forecast (2017-2026 CAGR of 1.89%)
- The final draft 2018 regional gross energy forecast is approximately 0.3% higher in 2026 than the 2017 CELT forecast
 - Percent differences vary over the forecast horizon and across states
- Net energy forecasts presented herein are illustrative and will change when the 2018 EE and BTM PV forecasts are finalized
 - These forecasts are developed annually as part of the EE Forecast Working Group (EEFWG) and Distributed Generation Forecast Working Group (DGFWG) stakeholder processes

Gross Energy Forecast

New England



2018 (+0.3% ,+410 GWh)

2022 (+0.3% , +411 GWh)

2026 (+0.3% , +479 GWh)



Gross Energy Forecast, cont.

New England

ISO-NE subtracts impacts of Federal Efficiency Standards (EISA07) from the modeled gross energy forecast

Year	2018 Draft Forecast			2017 CELT	Change (GWh)	% Change
	Gross Forecast w/o Standards (GWh)	Incremental Standards (GWh)	Gross Forecast with Standards (GWh)	Gross Forecast with Standards (GWh)		
2018	142,522	34	142,488	142,078	410	0.29%
2019	143,888	68	143,820	143,447	373	0.26%
2020	144,733	99	144,634	144,611	23	0.02%
2021	146,150	141	146,009	145,799	210	0.14%
2022	147,734	196	147,538	147,127	411	0.28%
2023	149,352	252	149,100	148,507	593	0.40%
2024	150,781	296	150,485	149,884	601	0.40%
2025	152,112	346	151,766	151,233	533	0.35%
2026	153,466	394	153,072	152,593	479	0.31%
2027	154,804	440	154,364			

Energy Forecast

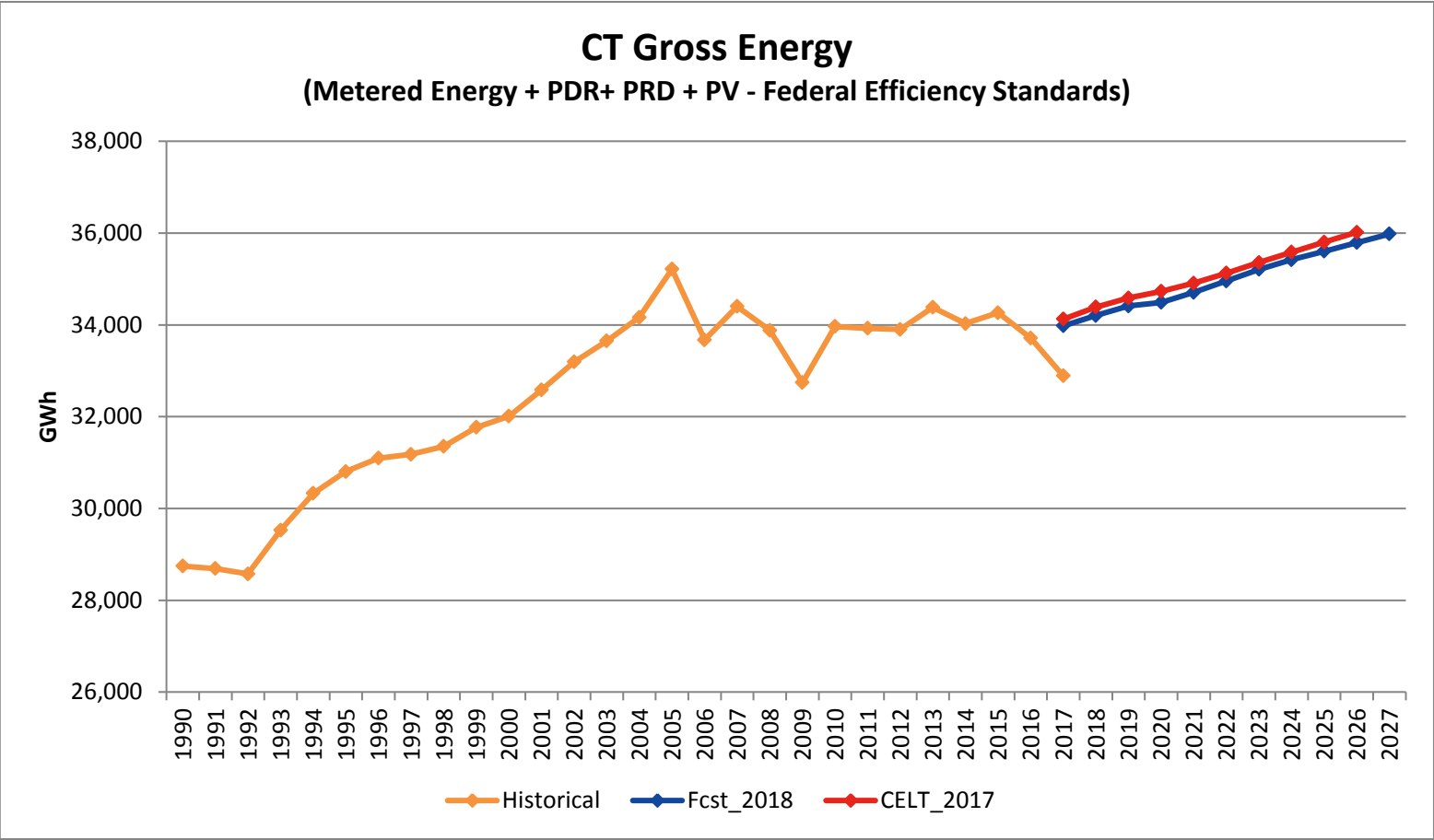
New England Gross and Net

Annual Energy (GWh)				
	Gross Forecast with Standards	PV:BTM *	PDR *	Net Forecast with Standards
2018	142,488	2,373	13,279	126,836
2019	143,820	2,800	14,911	126,109
2020	144,634	3,133	17,038	124,463
2021	146,009	3,381	19,441	123,187
2022	147,538	3,609	21,659	122,270
2023	149,100	3,830	23,683	121,587
2024	150,485	4,027	25,508	120,950
2025	151,766	4,185	27,137	120,444
2026	153,072	4,338	28,575	120,159
2027	154,364			

* 2017 EE and BTM PV forecast values used for reference only; 2018 EE and BTM PV forecasts are under development

Gross Energy Forecast

Connecticut



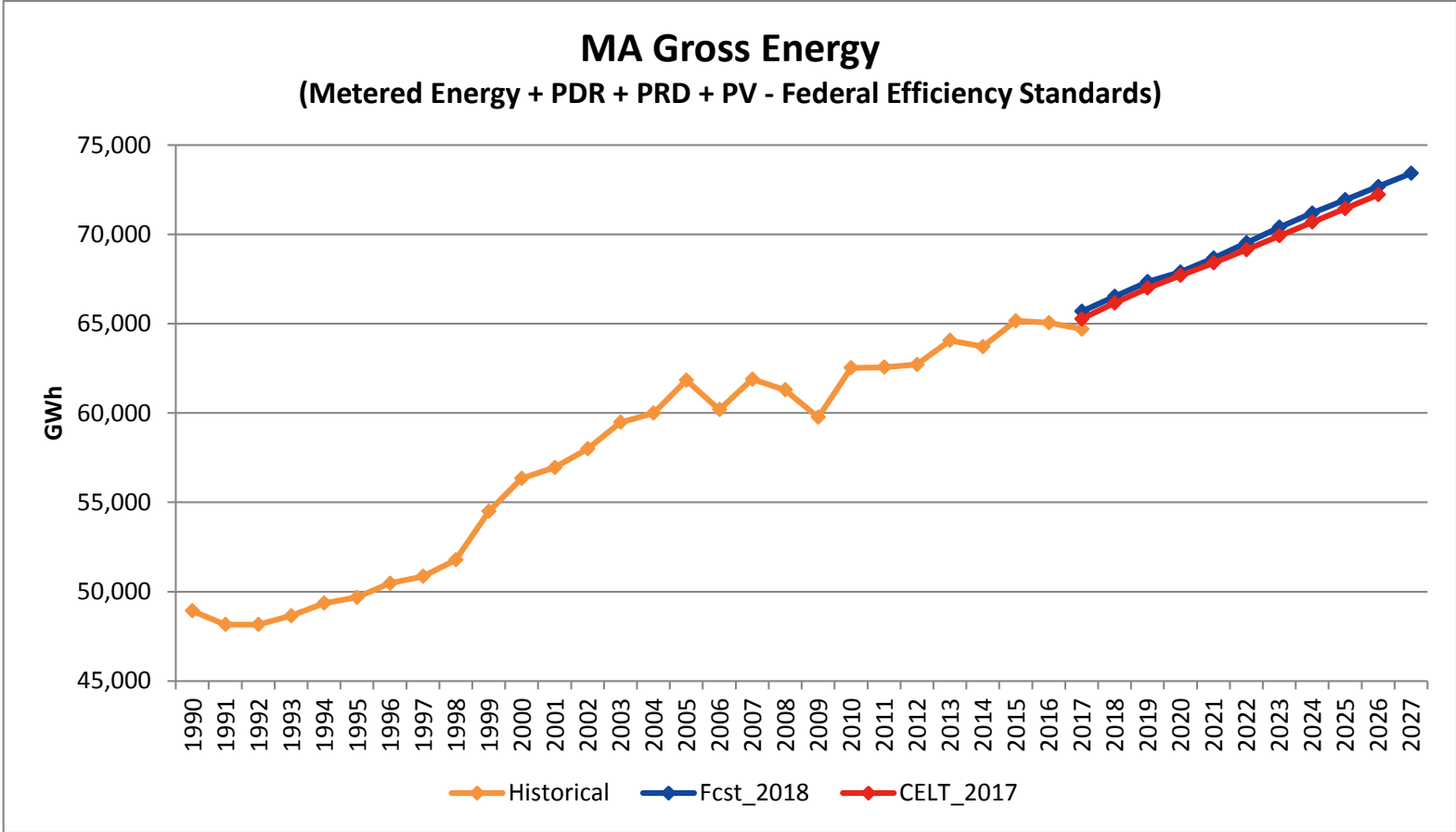
2018 (-0.5%, -185 GWh)

2022 (-0.5%, -173 GWh)

2026 (-0.6%, -223 GWh)

Gross Energy Forecast, cont.

Massachusetts



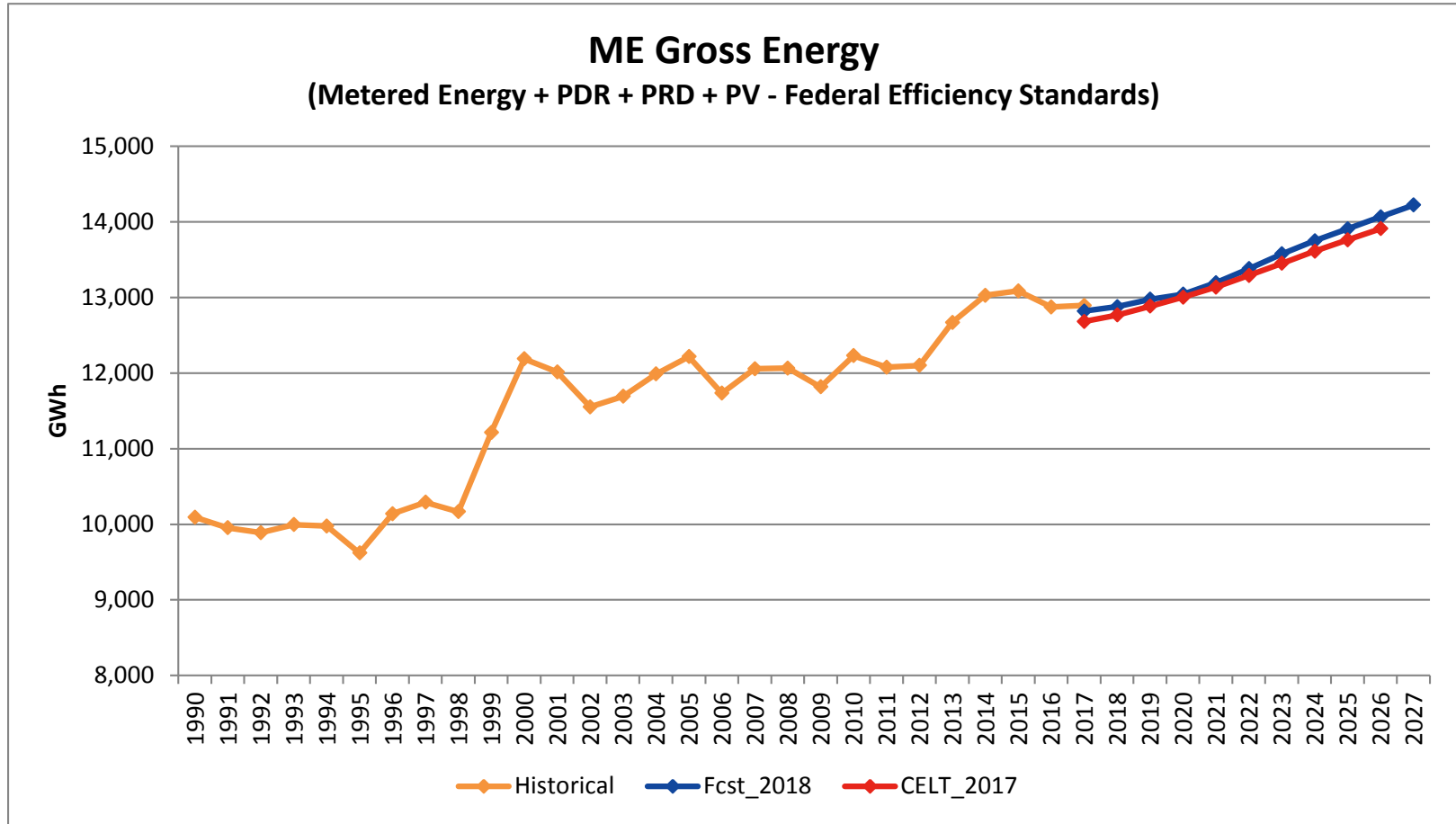
2018 (+0.6%, +369 GWh)

2022 (+0.5%, +380 GWh)

2026 (+0.6%, +458 GWh)

Gross Energy Forecast, cont.

Maine



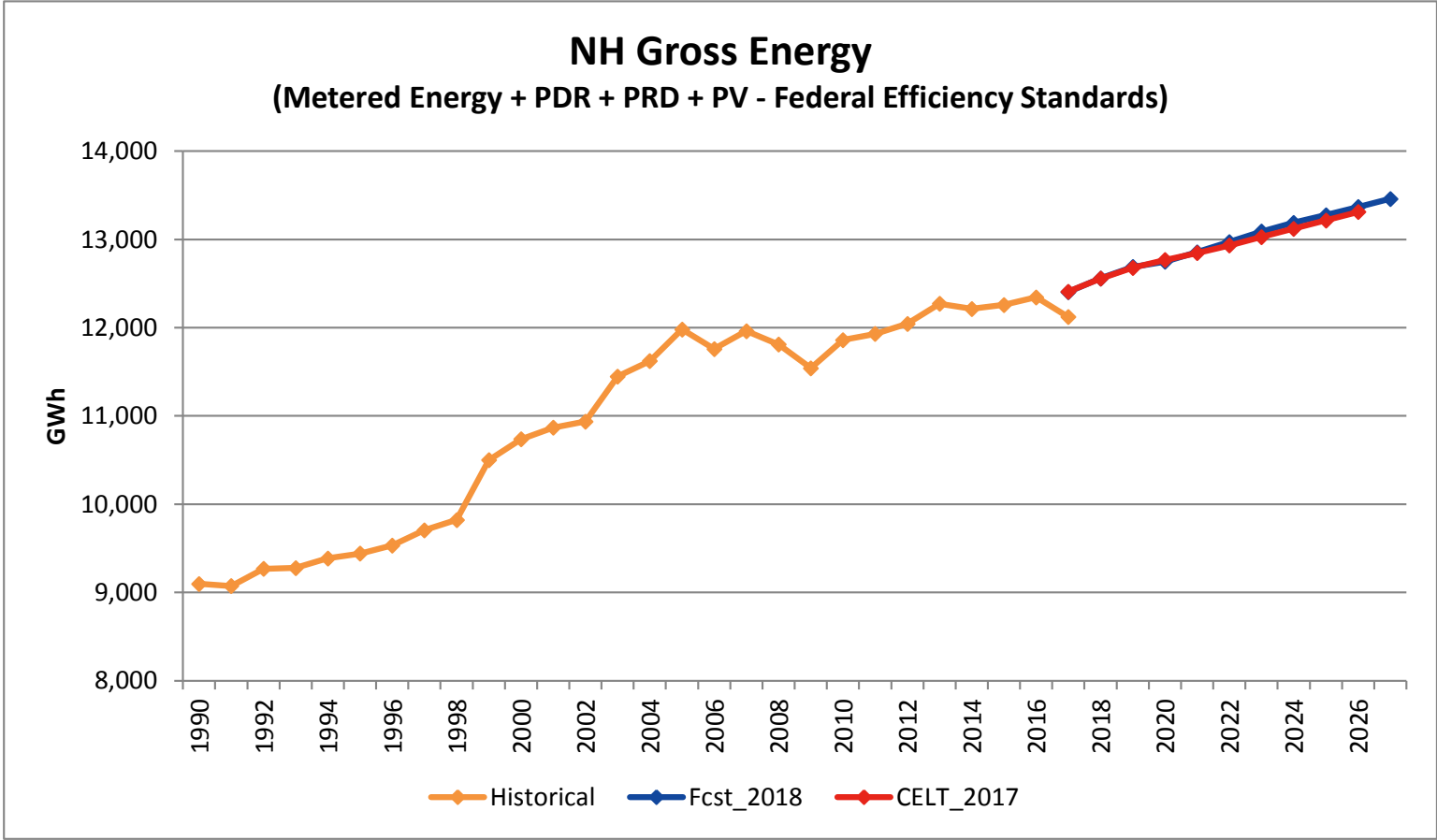
2018 (+0.9%, +110 GWh)

2022 (+0.7%, +90 GWh)

2026 (+1.1%, +157 GWh)

Gross Energy Forecast, cont.

New Hampshire



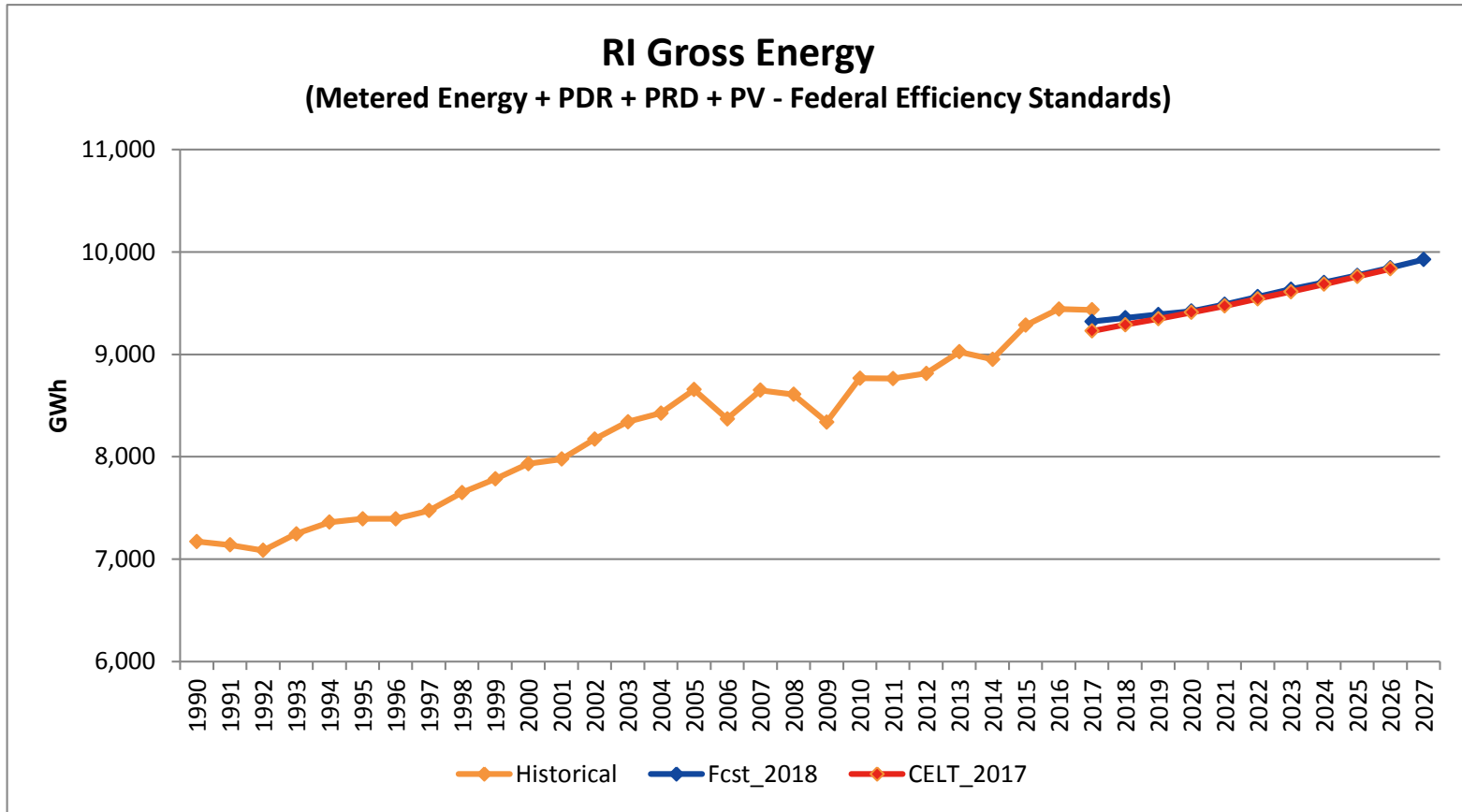
2018 (0.0% , +1 GWh)

2022 (+0.3% , +38 GWh)

2026 (+0.4% , +57 GWh)

Gross Energy Forecast, cont.

Rhode Island



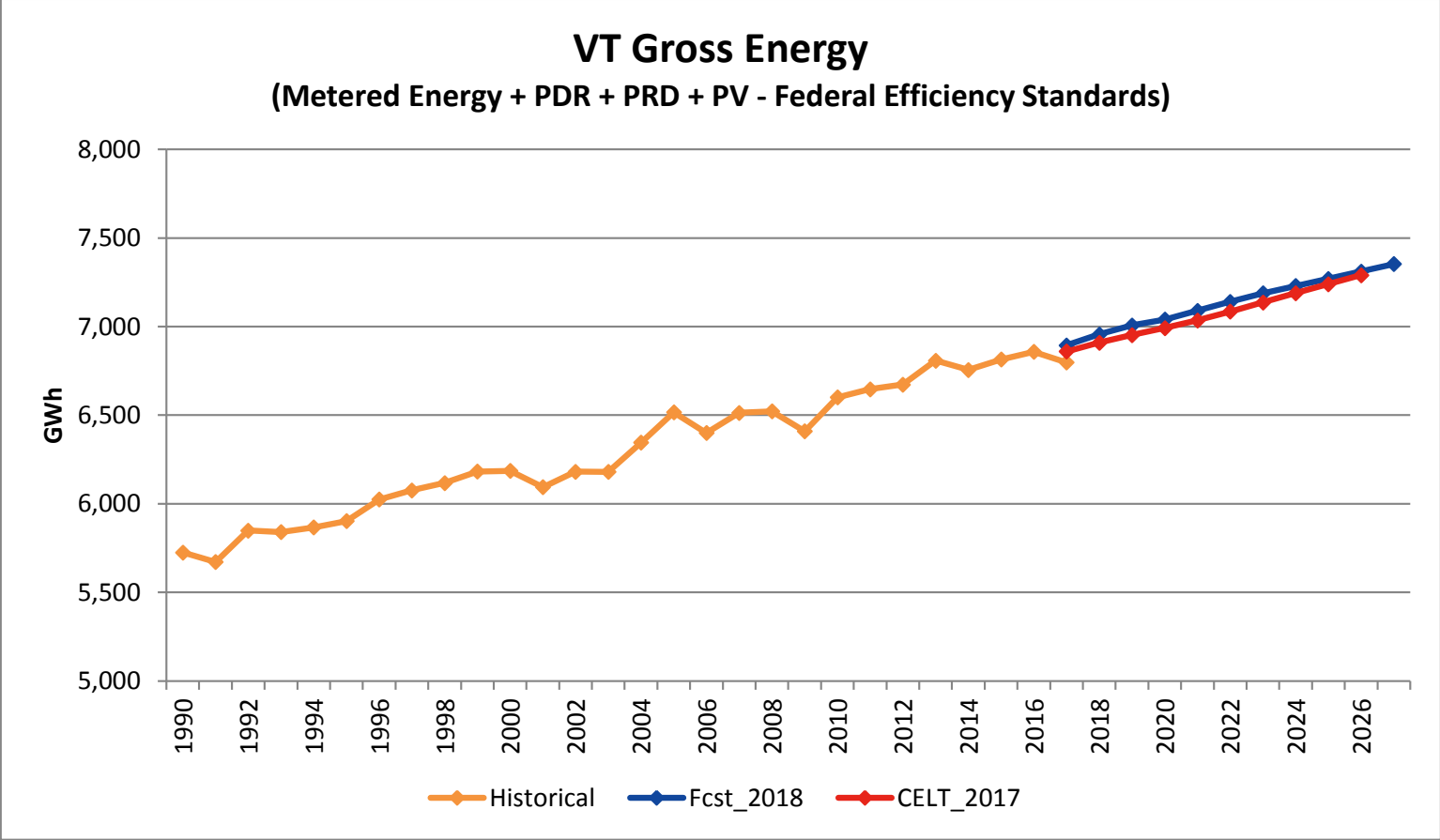
2018 (+0.7%, +68 GWh)

2022 (+0.2%, +21 GWh)

2026 (+0.1%, +10 GWh)

Gross Energy Forecast, cont.

Vermont



2018 (+0.7% , +47 GWh)

2022 (+0.8% , +55 GWh)

2026 (+0.3% , +20 GWh)

PRELIMINARY DRAFT 2018 SUMMER PEAK DEMAND FORECAST

Region and States

Draft 2018 Gross Summer Peak Demand Forecast

- The same methodology used to develop the CELT 2017 forecast was used to develop the 2018 CELT summer peak demand forecast
- Demand models were estimated using reconstituted daily peak demand from 2003-2017 (15 years)
- Summer demand model includes both July and August daily peaks for estimation
- Demand models use the annual energy forecast as an input variable
- Demand model statistics are included in Appendix to this presentation

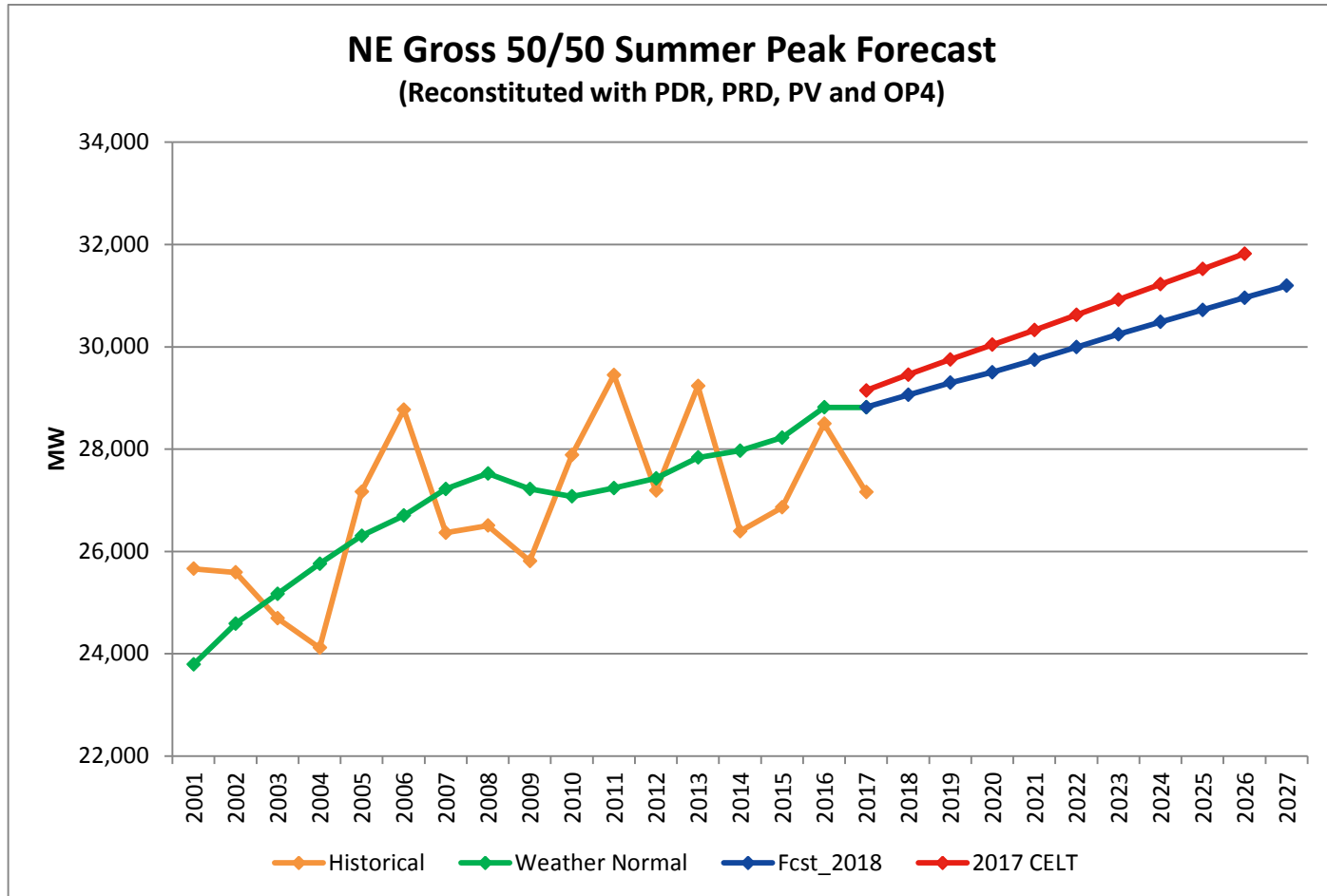
Draft 2018 Gross Summer Demand Forecast

Observations

- The 2018 draft gross regional summer peak demand forecast is lower than the CELT 2017 forecast by 1.3% in 2018 and 2.7% in 2026
 - Percent differences vary over the forecast horizon and across states
- The lower forecast is primarily the result of the updated 15-year model estimation period, which reflects more recent, post-recession load trends
 - Years 2002 thru 2016 were used for final CELT 2017 models
 - Years 2003 thru 2017 were used for draft CELT 2018 models
- Summer peak demand growth for the region has a compound annual growth rate (CAGR) of 0.80% from 2017 thru 2027, down from 0.98% from CELT 2017
 - All states have lower CAGRs in summer peak demand than CELT 2017 ranging from 0.45% in Vermont to 1.01% in Massachusetts
- Net demand forecasts presented herein are illustrative and will change when the 2018 EE and BTM PV forecasts are developed
 - These forecasts are developed annually as part of the EEFWG and DGFWG stakeholder processes

Gross Summer Peak Demand Forecast

New England 50/50 Peak



2018 (-1.3% , -394 MW)

2022 (-2.1% , -629 MW)

2026 (-2.7% , -863 MW)

Gross Summer Peak Demand Forecast, cont.

New England 50/50 Peak

	Fcst_18	CELT 2017	Change	% Change
	MW	MW	MW	
2018	29,060	29,454	-394	-1.3%
2019	29,298	29,753	-455	-1.5%
2020	29,504	30,039	-535	-1.8%
2021	29,744	30,327	-583	-1.9%
2022	29,994	30,623	-629	-2.1%
2023	30,245	30,923	-678	-2.2%
2024	30,486	31,223	-737	-2.4%
2025	30,721	31,521	-800	-2.5%
2026	30,957	31,820	-863	-2.7%
2027	31,192			

Summer Peak Demand Forecast

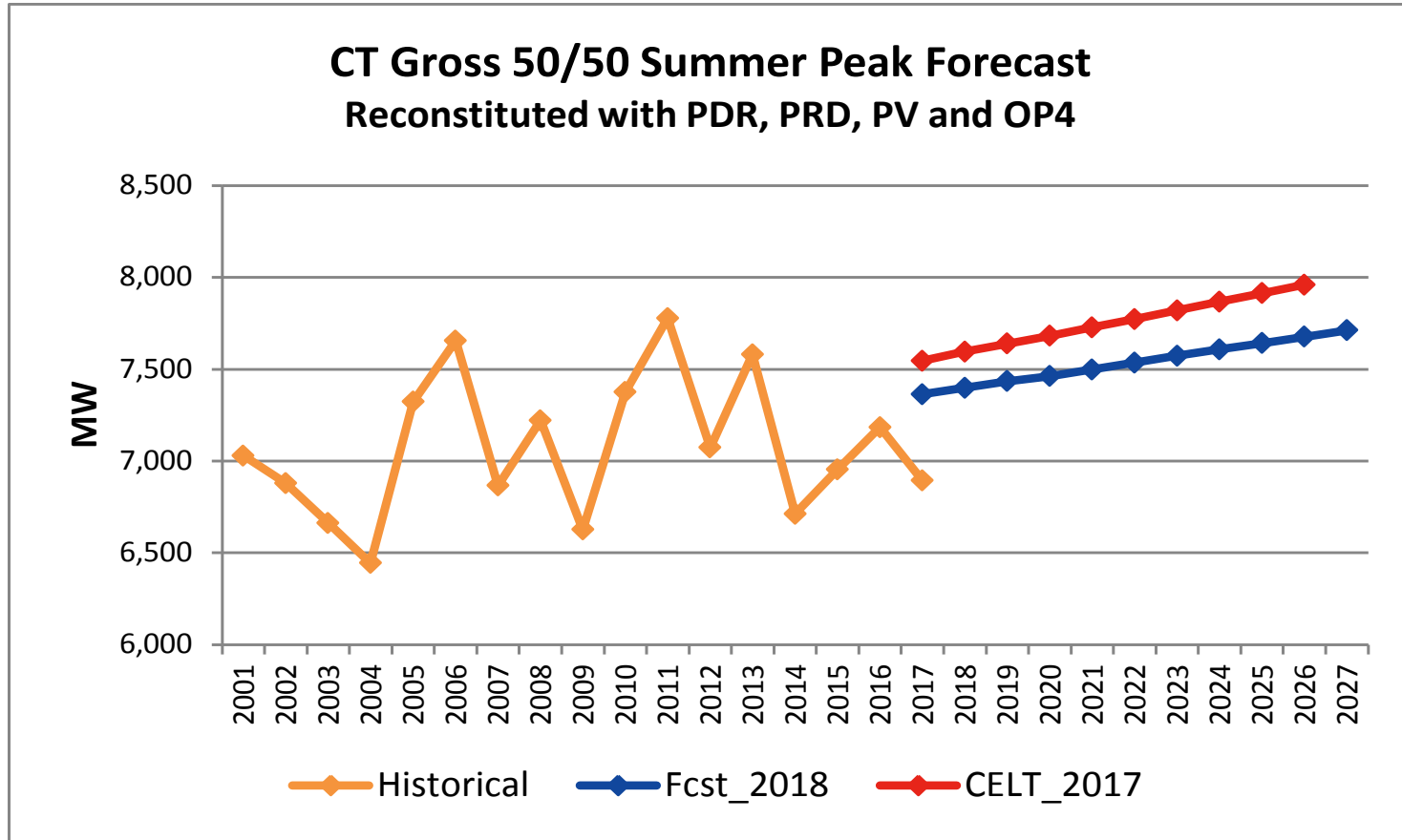
New England Gross and Net

Summer Peak (MW)						
Year	Gross	Gross	BTM PV*	PDR *	Net	Net
	50/50	90/10			50/50	90/10
2018	29,060	31,451	690	2,306	26,064	28,455
2019	29,298	31,716	783	2,561	25,954	28,372
2020	29,504	31,950	848	2,893	25,763	28,209
2021	29,744	32,217	891	3,223	25,630	28,103
2022	29,994	32,494	929	3,527	25,538	28,038
2023	30,245	32,773	963	3,805	25,477	28,005
2024	30,486	33,041	992	4,055	25,439	27,994
2025	30,721	33,303	1,014	4,278	25,429	28,011
2026	30,957	33,566	1,035	4,475	25,447	28,056
2027	31,192	33,829				
CAGR	0.79%	0.81%			-0.30%	-0.18%

* 2017 EE and BTM PV forecast values used since 2018 draft EE and BTM PV forecasts are not yet developed

Gross Summer Peak Demand Forecast

Connecticut 50/50 Peak



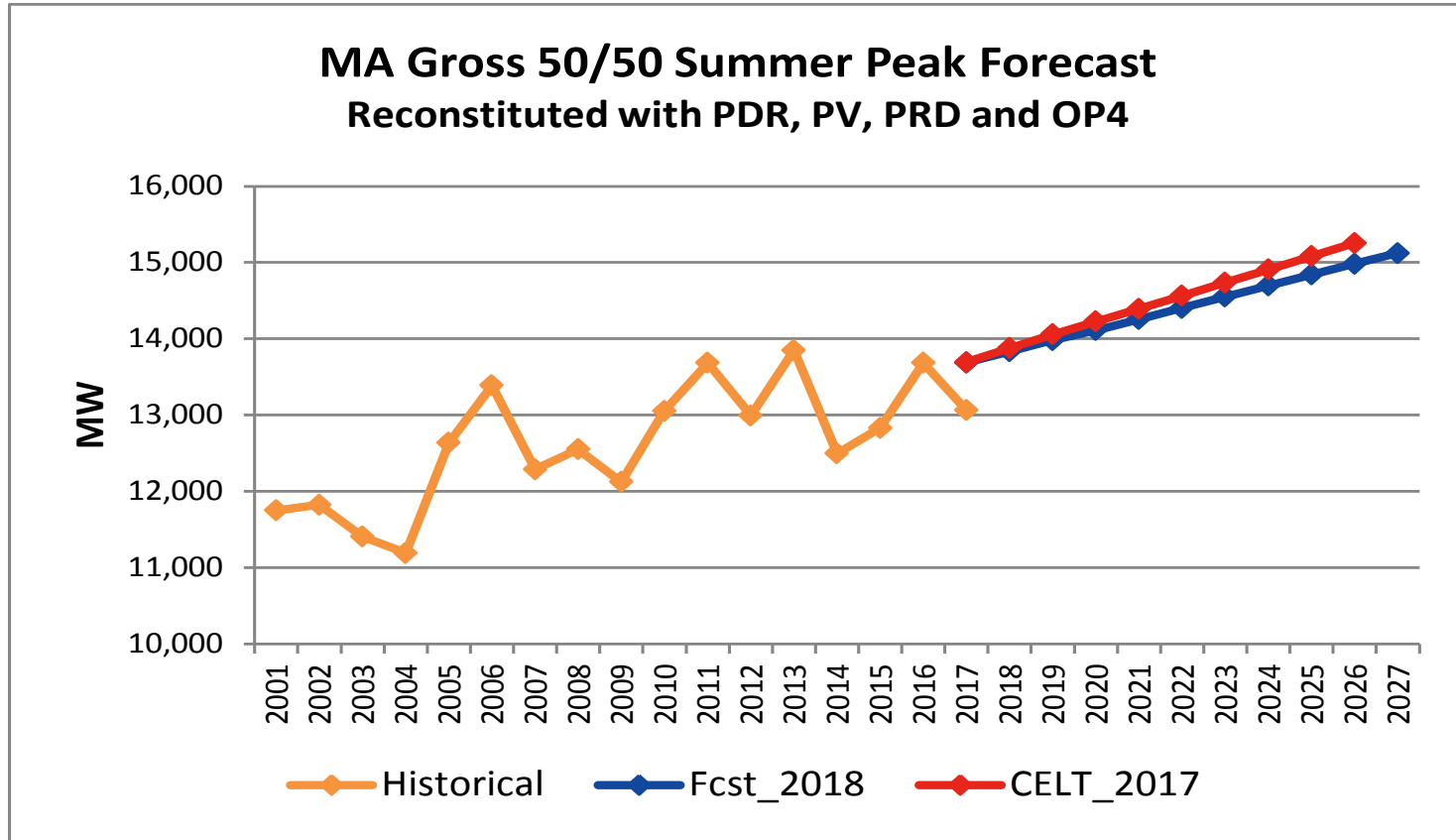
2018 (-2.6% , -196 MW)

2022 (-3.1% , -238 MW)

2026 (-3.6% , -283 MW)

Gross Summer Peak Demand Forecast, cont.

Massachusetts 50/50 Peak



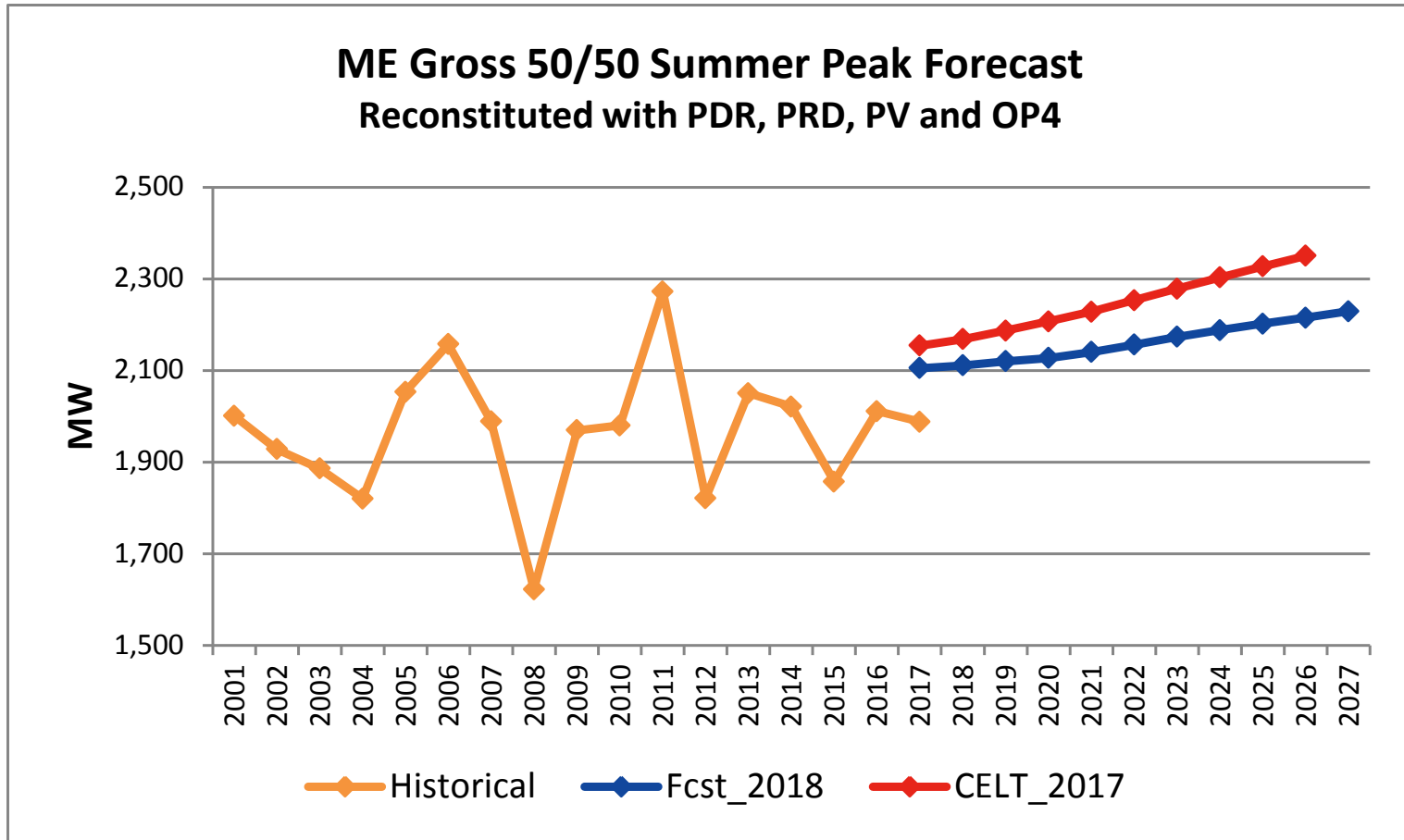
2017 (-0.3% , -42 MW)

2022 (-1.1% , -159 MW)

2026 (-1.8% , -273 MW)

Gross Summer Peak Demand Forecast, cont.

Maine 50/50 Peak



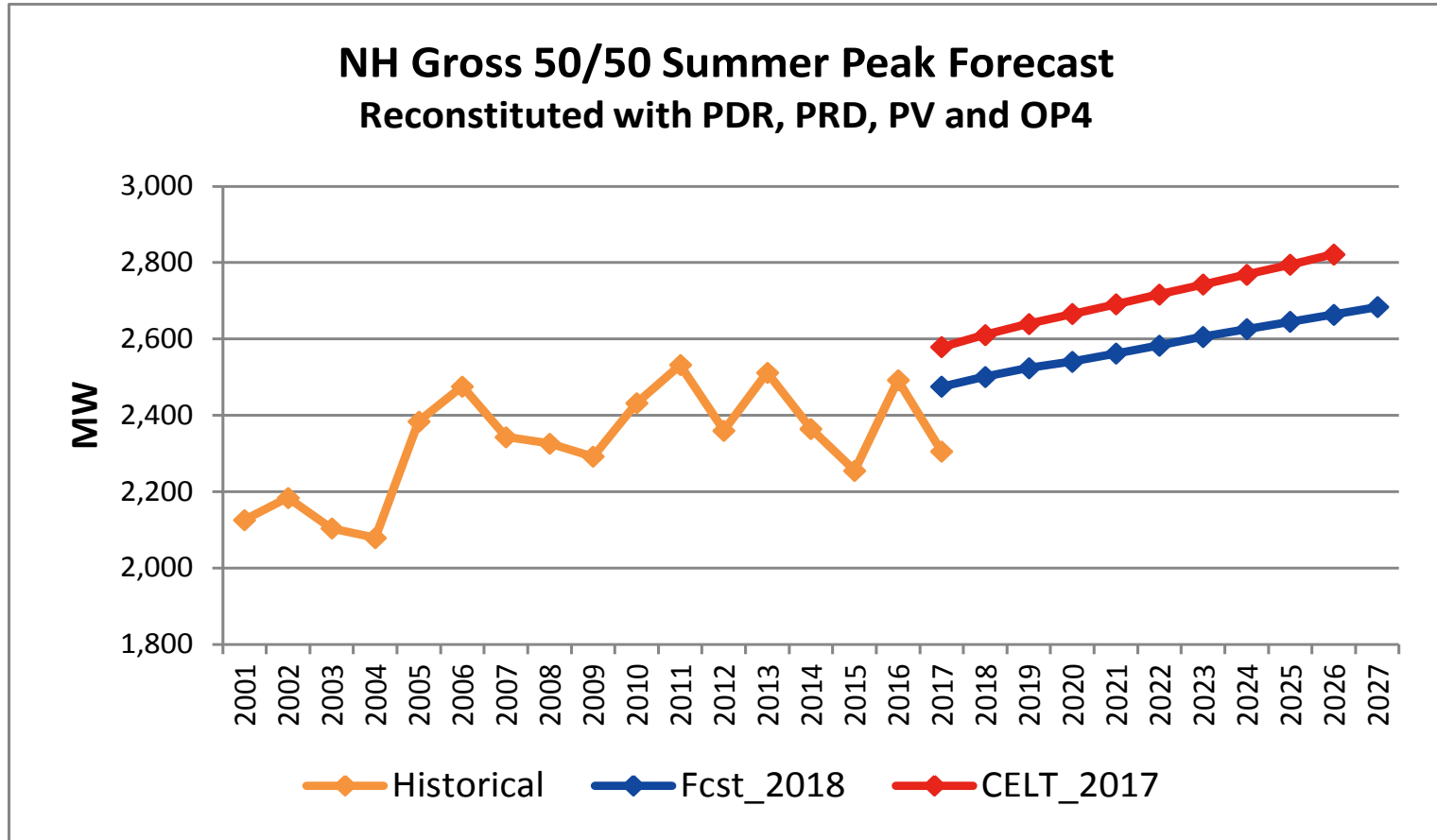
2018 (-2.6% , -57 MW)

2022 (-4.3% , -97 MW)

2026 (-5.7% , -135 MW)

Gross Summer Peak Demand Forecast, cont.

New Hampshire 50/50 Peak



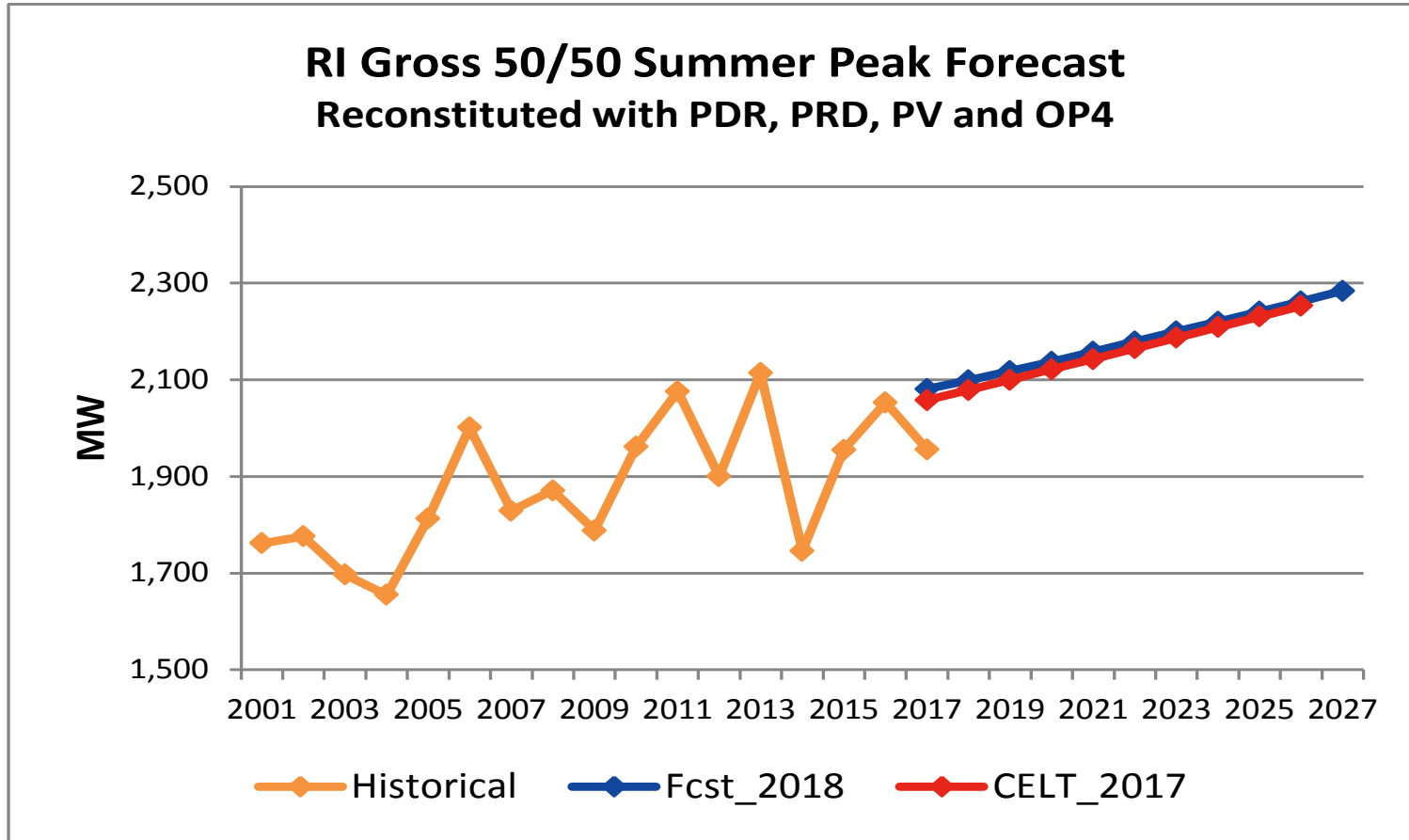
2018 (-4.2% , -110 MW)

2022 (-4.9% , -134 MW)

2026 (-5.6% , -158 MW)

Gross Summer Peak Demand Forecast, cont.

Rhode Island 50/50 Peak



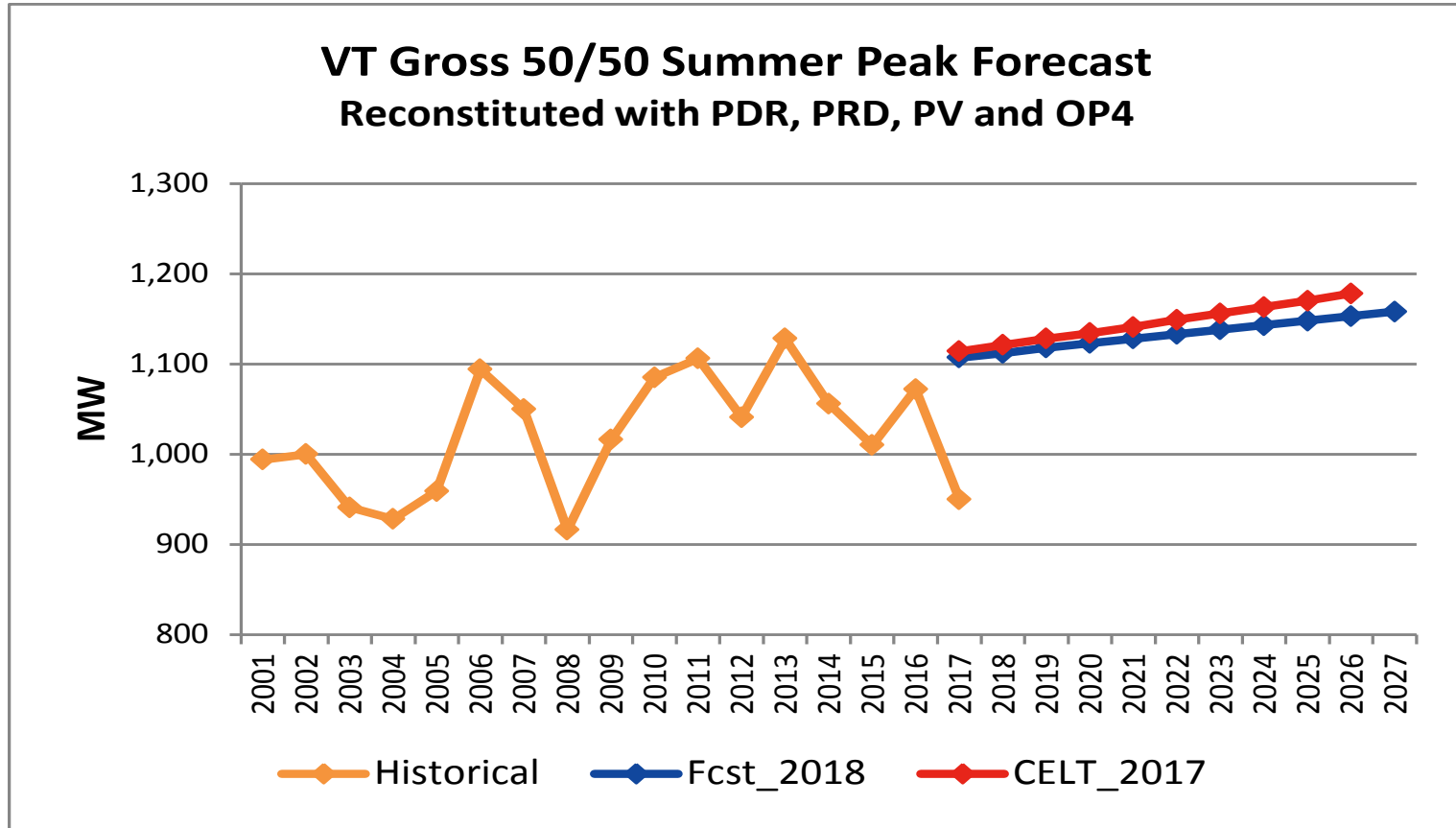
2018 (1.0% , 20 MW)

2022 (0.6% , 14 MW)

2026 (0.4% , 9 MW)

Gross Summer Peak Demand Forecast, cont.

Vermont 50/50 Peak



2018 (-0.8% , -9 MW)

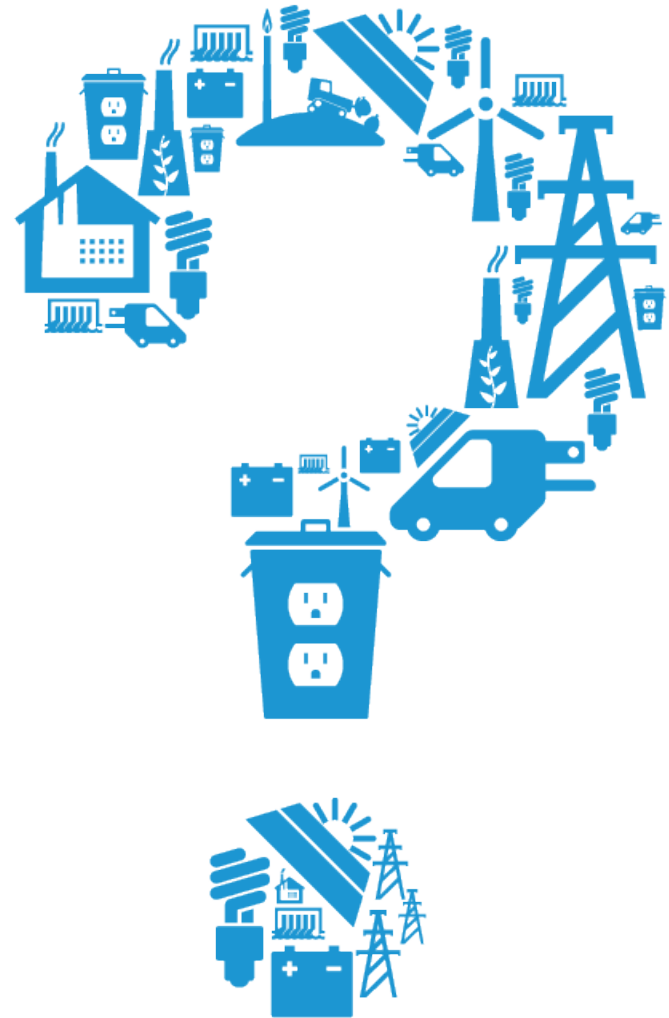
2022 (-1.4% , -16 MW)

2026 (-2.1% , -25 MW)

Next Steps

- Next LFC meeting is March 28, 2018
 - Final draft summer peak forecast will be discussed along with draft winter peak forecast
- Presentations at the PAC
 - March 14, 2018
 - April 26, 2018
- The final forecast will be published as part of the 2018 CELT by May 1

Questions



APPENDIX

Regional Energy Forecast Model Details/Statistics

Energy Model Variables

Energy Models	
Variable	Definition
Intercept	Constant Term
_Log	Natural Logarithm
NEL	Net Energy for Load net of Passive Demand Resources and PV, GWh
NEL_LAG	NEL lagged 1 period
RGSP	Real Gross State/Regional Product
RPI	Annual Average Real Personal Income
RP	Real Price of Electricity
CDD	Total Annual Cooling Degree Days, Base 55°
HDD	Total Annual Heating Degree Days, Base 65°
Trend	Annual index
YRXXXX	Dummy Variable; YRXXXX=1 if Year=XXXX; 0 otherwise

Energy Model Statistics (New England)

2018 CELT New England Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	2.0338	0.6613	3.08	0.006
nel_log_lag	0.3654	0.1087	3.36	0.003
RGSP_log	0.3139	0.0530	5.92	<.0001
RP_log	-0.0212	0.0245	-0.87	0.396
CDD_log	0.0380	0.0097	3.94	0.001
HDD_log	0.1186	0.0343	3.46	0.002
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	5	0.2203	0.0441	486.85
Error	22	0.0020	0.0001	
Corrected Total	27	0.2223		
Other Statistics				
Root MSE	0.00951	R-Square	0.991	

Energy Model Statistics (Connecticut)

2018 CELT Connecticut Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	1.3526	0.9599	1.41	0.173
nel_log_lag	0.4629	0.1551	2.98	0.007
RGSP_log	0.2005	0.0645	3.11	0.005
RP_log	-0.0366	0.0202	-1.81	0.084
CDD_log	0.0698	0.0174	4.02	0.001
HDD_log	0.1686	0.0465	3.62	0.002
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	5	0.0977	0.0195	110.87
Error	22	0.0039	0.0002	
Corrected Total	27	0.1016		
Other Statistics				
Root MSE	0.01327	R-Square	0.9618	

Energy Model Statistics (Maine)

2018 CELT Maine Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	0.5054	1.1501	0.44	0.665
nel_log_lag	0.5759	0.1350	4.27	0.003
RGSP_log	0.3182	0.1027	3.10	0.005
RP_log	-0.0966	0.0756	-1.28	0.215
HDD_log	0.0335	0.0959	0.35	0.730
yr2000	0.0649	0.0276	2.35	0.028
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	5	0.2541	0.0508	71.34
Error	22	0.0157	0.0008	
Corrected Total	27	0.2697		
Other Statistics				
Root MSE	0.02669	R-Square	0.9419	

Energy Model Statistics (Massachusetts)

2018 CELT Massachusetts Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	0.5540	0.4417	1.25	0.224
nel_log_lag	0.6276	0.0777	8.07	<.0001
RGSP_log	0.2054	0.0391	5.25	<.0001
RP_log	-0.0673	0.0205	-3.28	0.004
CDD_log	0.0305	0.0080	3.83	0.001
HDD_log	0.1058	0.0269	3.93	0.001
yr2010	0.0298	0.0085	3.53	0.002
yr2007	0.0270	0.0084	3.20	0.005
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	7	0.3170	0.0453	558.76
Error	20	0.0012	5.93E-05	
Corrected Total	27	0.3182		
Other Statistics				
Root MSE	0.00770	R-Square	0.9963	

Energy Model Statistics (New Hampshire)

2018 CELT New Hampshire Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	1.1494	0.5450	2.11	0.047
nel_log_lag	0.5419	0.0710	7.63	<.0001
RGSP_log	0.2218	0.0357	6.21	<.0001
RP_log	-0.0949	0.0419	-2.27	0.034
CDD_log	0.0301	0.0105	2.87	0.009
HDD_log	0.0900	0.0424	2.13	0.046
yr2010	-0.0314	0.0135	-2.32	0.030
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	6	0.3359	0.0560	394.80
Error	21	0.0030	0.0001	
Corrected Total	27	0.3389		
Other Statistics				
Root MSE	0.01191	R-Square	0.9912	

Energy Model Statistics (Rhode Island)

2017 CELT Rhode Island Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	2.3580	0.6353	3.71	0.001
nel_log_lag	0.5223	0.0807	6.47	<.0001
RPI_log	0.2849	0.0462	6.16	<.0001
CDD_log	0.0448	0.0096	4.68	0.000
HDD_log	0.0759	0.0297	2.56	0.019
yr2006	-0.0372	0.0087	-4.30	0.001
yr2009	-0.0256	0.0090	-2.85	0.010
yr2011	-0.0163	0.0082	-1.99	0.061
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	7	0.2197	0.0314	370.8
Error	20	0.0012	6.13E-05	
Corrected Total	27	0.2210		
Other Statistics				
Root MSE	0.00783	R-Square	0.9945	

Energy Model Statistics (Vermont)

2018 CELT Vermont Energy Model				
Dependent Variable:	log (Nel+PDR+PRD+BTMPV)			
Sample:	1990:2017			
Observations	28			
Parameter Estimates				
Variable	Estimate	Standard Error	t Value	Pr > t
Intercept	7.5829	0.3543	21.40	<.0001
trend	0.0056	0.0007	8.02	<.0001
RGSP_log	0.0723	0.0313	2.31	0.031
HDD_log	0.0345	0.0283	1.22	0.237
yr2001	-0.0205	0.0087	-2.36	0.028
yr2003	-0.0267	0.0090	-2.98	0.007
yr2009	-0.0246	0.0085	-2.89	0.009
Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	5	0.0888	0.0148	223.98
Error	21	0.0014	6.61E-05	
Corrected Total	26	0.0902		
Other Statistics				
Root MSE	0.00813	R-Square	0.9846	

Summer Peak Model Variables

Summer Peak Model	
Variable	Definition
Intercept	Constant Term
PEAK	Daily Peak Load, net of PDR and PV, MW
MA_NEL	12-month Moving Sum Annual Net Energy for Load, net of PDR and PV, GWh
WTHI_SQ	3-day Weighted Temperature-Humidity Index at the time of the Peak Load, base = 55,
TIMEWTHI	Year indicator; 1992=1,..., 2015=24*WTHI
WeekendWTHI	Weekend*WTHI
July_04WTHI	July_04*WTHI
HOLWTHI	Holiday*WTHI
Weekend, Saturday, Sunday, Holiday, July_04, July, etc.	Dummy variables = 1 if condition is true; 0 otherwise
WK1	Dummy variable = 1 if Day<=7; 0 otherwise
Yxxxx	Dummy variable = 1 if Year=xxxx; 0 otherwise
AR(i)	Correction for autocorrelated errors of order i

Summer Peak Model Statistics (New England)

2018 CELT New England Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	6674	2471.00	2.70	0.007
ma_nel	1	0.062	0.02	3.37	0.001
WTHI_SQ	1	15.344	0.71	21.50	<.0001
TimeWTHI	1	0.253	0.04	6.95	<.0001
WeekendWTHI	1	-7.666	0.16	-47.95	<.0001
JULY_04WTHI	1	-7.427	0.55	-13.43	<.0001
HOLWTHI	1	-3.681	0.73	-5.01	<.0001
AR(1)		-0.316	0.03	-10.12	

F test				
Source	DF	Mean Square	F Value	Pr > F
Numerator	1	3270855	6.34	0.012
Denominator	920	515854		

Other Statistics			
MSE	515814	Standard Error	718.20
MAE	567.47	MAPE	2.78
Durbin-Watson	1.92	R-Square	0.938

Summer Peak Model Statistics (Connecticut)

2018 CELT Connecticut Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	1464	854.67	1.71	0.0871
ma_nel	1	0.071	0.03	2.81	0.0051
WTHI_SQ	1	3.980	0.13	29.67	<.0001
TimeWTHI	1	0.032	0.01	5.16	<.0001
Julwk1	1	-80.352	30.06	-2.67	0.0077
July_04	1	-705.570	56.53	-12.48	<.0001
JulSat	1	-724.819	27.53	-26.33	<.0001
JulSun	1	-739.370	27.51	-26.88	<.0001
AugSat	1	-737.947	27.31	-27.02	<.0001
AugSun	1	-731.232	27.42	-26.67	<.0001
yr2012	1	182.830	39.78	4.60	<.0001
AR(1)		-0.277	0.03	-8.70	
F test					
Source	DF	Mean Square	F Value	Pr > F	
Numerator	1	25551578	557.45	<.0001	
Denominator	912	45836			
Other Statistics					
MSE	45836		Standard Error	214.09	
MAE	165.82		MAPE	3.11	
Durbin-Watson	1.96		R-Square	0.927	

Summer Peak Model Statistics (Maine)

2018 CELT Maine Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	593	105.13	5.64	<.0001
ma_nel	1	0.078	0.01	9.13	<.0001
WTHI_SQ	1	0.759	0.06	12.73	<.0001
TimeWTHI	1	0.003	0.00	1.02	0.309
Julwk1	1	-46.172	6.95	-6.64	<.0001
Saturday	1	-145.505	4.32	-33.70	<.0001
Sunday	1	-121.847	4.39	-27.77	<.0001
July_04	1	-155.193	12.04	-12.89	<.0001
yr2004	1	40.686	10.21	3.99	<.0001
AR1		-0.376	0.03	-12.26	

F test				
Source	DF	Mean Square	F Value	Pr > F
Numerator	1	1169096	530.48	<.0001
Denominator	916	2203.84968		

Other Statistics			
MSE	2204	Standard Error	46.95
MAE	36.25	MAPE	2.11
Durbin-Watson	1.92	R-Square	0.900

Summer Peak Model Statistics (Massachusetts)

2018 CELT Massachusetts Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	3029	1083.00	2.80	0.005
ma_nel	1	0.069	0.02	3.92	<.0001
WTHI_SQ	1	5.550	0.38	14.70	<.0001
TiMEWTHI	1	0.146	0.02	7.45	<.0001
Julwk1	1	-192.188	48.83	-3.94	<.0001
Hol_July_04	1	-596.424	148.48	-4.02	<.0001
July_04	1	-1238.000	87.44	-14.16	<.0001
Saturday	1	-1372.000	31.37	-43.72	<.0001
Sunday	1	-1358.000	31.23	-43.49	<.0001
yr2012	1	253.061	67.01	3.78	0.000
yr2017	1	-19.168	71.99	-0.27	0.790
AR(1)		-0.330	0.03	-10.59	
F test					
Source	DF	Mean Square	F Value	Pr > F	
Numerator	1	47839347	417.63	<.0001	
Denominator	917	114550			
Other Statistics					
MSE	114550	Standard Error		338.45	
MAE	265.69	MAPE		2.78	
Durbin-Watson	1.89	R-Square		0.949	

Summer Peak Model Statistics (New Hampshire)

2018 CELT New Hampshire Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	180	192.19	0.94	0.348
ma_nel	1	0.108	0.02	6.62	<.0001
WTHI_SQ	1	1.046	0.05	19.90	<.0001
TiMEWTHI	1	0.016	0.00	6.02	<.0001
Julwk1	1	-41.627	8.08	-5.15	<.0001
July_04	1	-215.314	16.34	-13.18	<.0001
Saturday	1	-219.477	5.75	-38.15	<.0001
Sunday	1	-225.465	5.74	-39.29	<.0001
yr2013	1	-27.705	11.45	-2.42	0.016
yr2014	1	-26.663	11.97	-2.23	0.026
yr2015	1	-47.579	11.72	-4.06	<.0001
yr2017	1	-60.399	11.85	-5.10	<.0001
AR(1)		-0.218	0.03	-6.76	
F test					
Source	DF	Mean Square	F Value	Pr > F	
Numerator	1	1607803	432.08	<.0001	
Denominator	916	3721.0536			
Other Statistics					
MSE	3721		Standard Error	61.00	
MAE	47.08		MAPE	2.61	
Durbin-Watson	1.96		R-Square	0.940	

Summer Peak Model Statistics (Rhode Island)

2018 CELT Rhode Island Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	541	146.00	3.70	0.000
ma_nel	1	0.056	0.02	3.35	0.0009
WTHI_SQ	1	0.779	0.06	13.74	<.0001
TiMEWTHI	1	0.026	0.00	8.66	<.0001
Julwk1	1	-46.039	7.93	-5.80	<.0001
July_04	1	-171.730	14.58	-11.78	<.0001
Saturday	1	-180.458	5.30	-34.08	<.0001
Sunday	1	-190.930	5.30	-36.00	<.0001
AR(1)		-0.301	0.03	-9.56	
F test					
Source	DF	Mean Square	F Value	Pr > F	
Numerator	1	2317273	711.63	<.0001	
Denominator	918	3256.302			
Other Statistics					
MSE	3256		Standard Error	57.06	
MAE	45.00		MAPE	3.17	
Durbin-Watson	1.97		R-Square	0.940	

Summer Peak Model Statistics (Vermont)

2018 CELT Vermont Summer Peak Model					
Dependent Variable:	Recon_Peak				
Sample:	2003:2017				
Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > t
Intercept	1	505	64.15	7.87	<.0001
ma_nel	1	0.048	0.01	4.87	<.0001
WTHI_SQ	1	0.288	0.03	10.89	<.0001
TiMEWTHI	1	0.005	0.001	3.93	<.0001
Julwk1	1	-13.318	3.02	-4.41	<.0001
Saturday	1	-115.034	1.86	-61.84	<.0001
Sunday	1	-114.118	1.86	-61.50	<.0001
July_04	1	-122.017	5.18	-23.57	<.0001
AR(1)		-0.370	0.03	-12.05	
F test					
Source	DF	Mean Square	F Value	Pr > F	
Numerator	1	532981	1293.43	<.0001	
Denominator	918	412.06883			
Other Statistics					
MSE	412.07		Standard Error	20.300	
MAE	15.64		MAPE	1.77	
Durbin-Watson	2.05		R-Square	0.942	