

# ISO New England RSP11 Long-run Forecast of Energy and Seasonal Peaks

PAC Meeting  
February 16, 2011

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# Agenda

- Highlights
- 2010 Weather Normal Energy and Summer Peak
- Economic Forecast
- Preliminary 2011 CELT/RSP ISO-NE Annual Energy & Seasonal Peak Forecast
- State and Subarea forecasts will be developed over the next six weeks

# Highlights

- The economic forecast is essentially the same as last year - except Economy.com made adjustments to state wage rates to make them consistent with the US, that have made New England real income higher than last year – last year's real income was understated
- The CELT 2011 forecast is using real gross domestic product (GDP) instead of real income for energy forecasting as it is more consistent across forecasts
- Updated economic and historical weather inputs have resulted in higher forecasts of energy but similar forecasts of seasonal peak loads compared to RSP10
- The Load Forecast Committee reviewed the forecast on January 24 without objection
- No changes in forecast methodology used for RSP11

# 2010 Weather Normal Energy and Summer Peak

# Weather Normal 2010 Energy and Changes from Weather Normal 2009 Energy

- The actual weather normal 2010 energy is 134,160 GWh, 2.2% (2855 GWh) higher than the April 2010 forecast of 131,305 GWh
- After adjusting for weather and weekday/weekend, energy demand is up by 1.3% compared to the actual weather normal 2009 energy
- After adjusting for FCM Passive Demand Resources (EE), energy demand is up by 1.6% compared to 2009
- FCM Passive Demand Resources (EE) adjustments account for 22% of the Weather Normal Energy + PDR increase, and the economy accounts for the remaining 78% of the increase

	<u>2009</u>	<u>2010</u>	<u>GWh Change</u>	<u>% Change</u>
Weather Normal Energy	128268	129910	1642	1.3
Passive Demand Resources	3774	4248	474	
Weather Normal Energy + PDR	132042	134160	2118	1.6

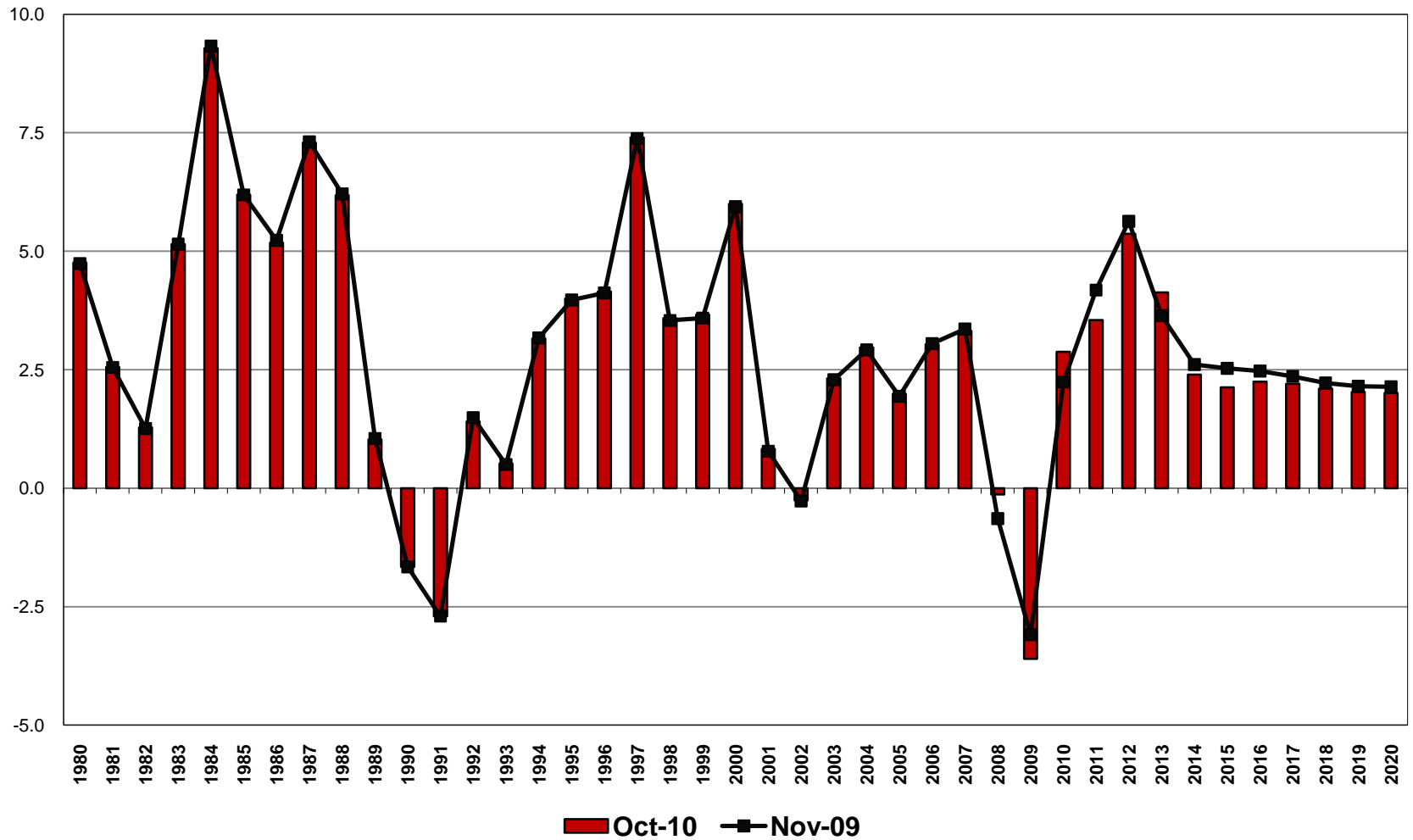
# Weather Normal 2010 Summer Peak Load

- The weather normalized peak load for the summer of 2010 is 27,075 MW, 0.42% (115 MW) lower than the April 2010 forecast of 27,190 MW for the summer of 2010
- The ISO New England Control Area actual summer peak load of 27,100 MW - 27,677 MW after reconstitution for FCM passive demand resources – occurred on July 6 at a temperature/humidity index (WTHI) of 80.4
- The weather normalized peak is consistent with the 50/50 peak forecast and its expected WTHI of 79.9. The weather normalized peak at a WTHI of 80.4 would have been 27,500 MW
- The FCM passive demand resources have not been netted out of the weather normalized peak and peak forecasts

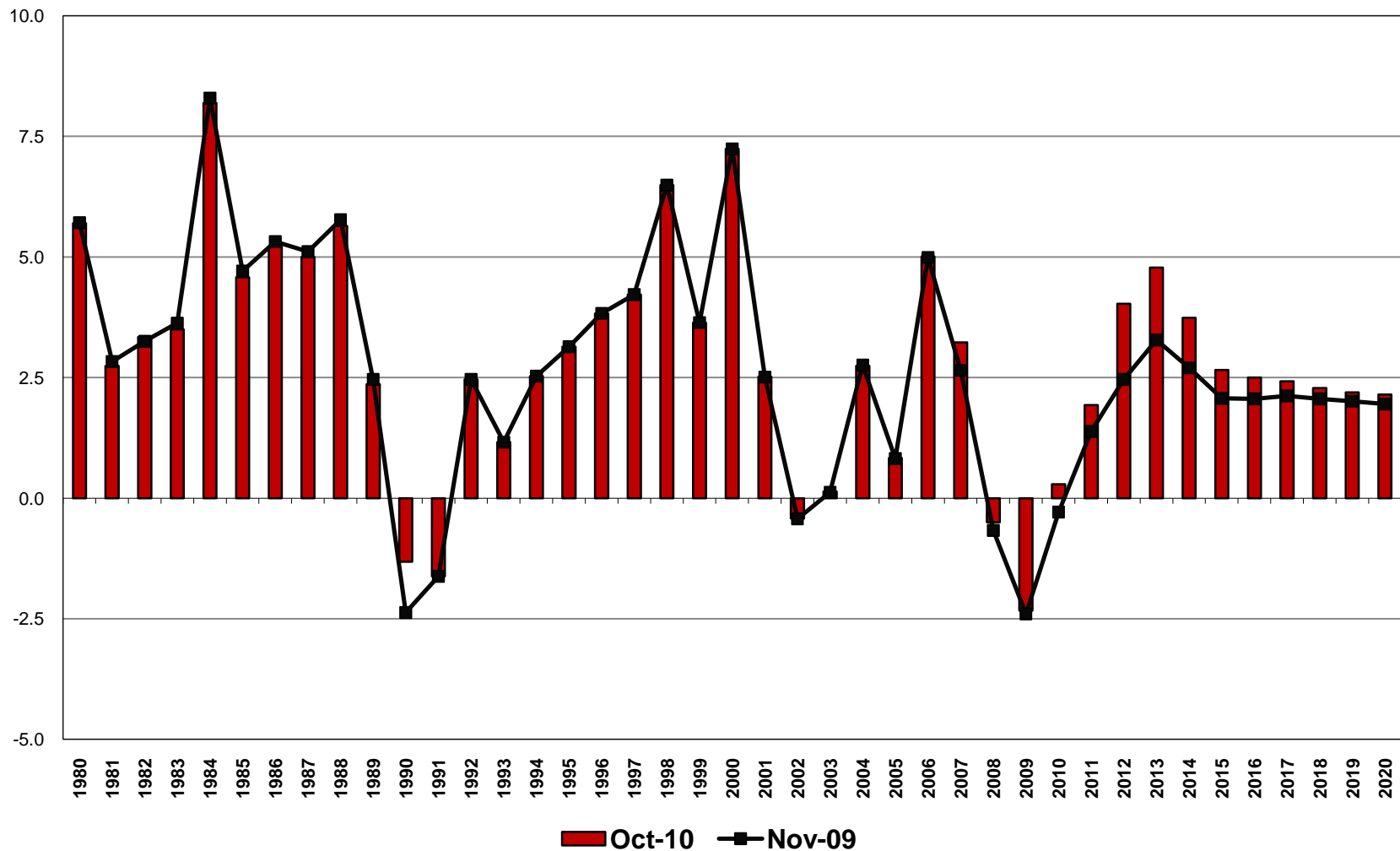
# Economic Forecast

## ECONOMY.COM 2010 vs. 2009 FORECASTS

### NE Real Gross Domestic Product (2005\$) ANNUAL PERCENT CHANGE

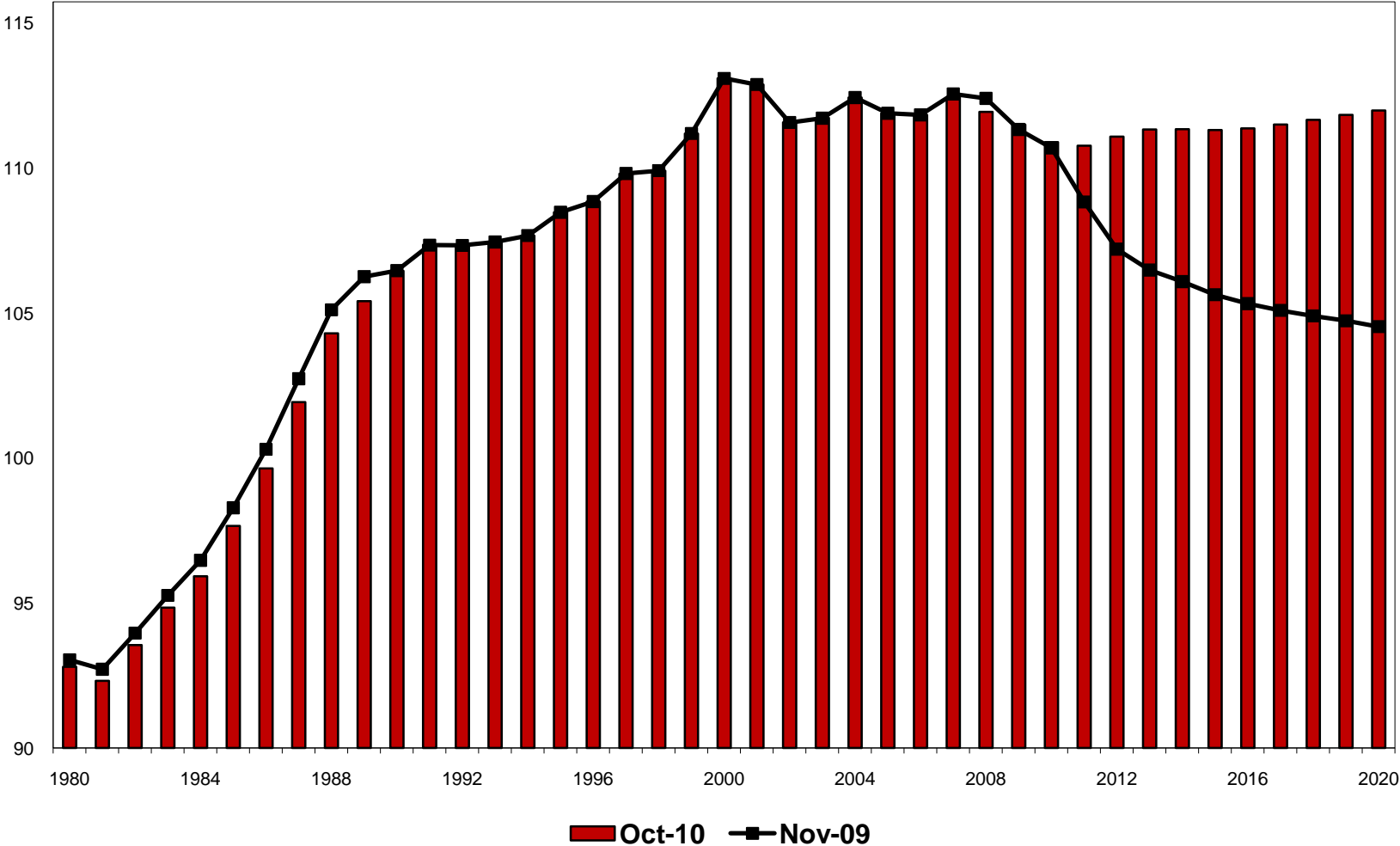


## ECONOMY.COM 2010 vs. 2009 FORECASTS NE Real Personal Income (2005\$) ANNUAL PERCENT CHANGE



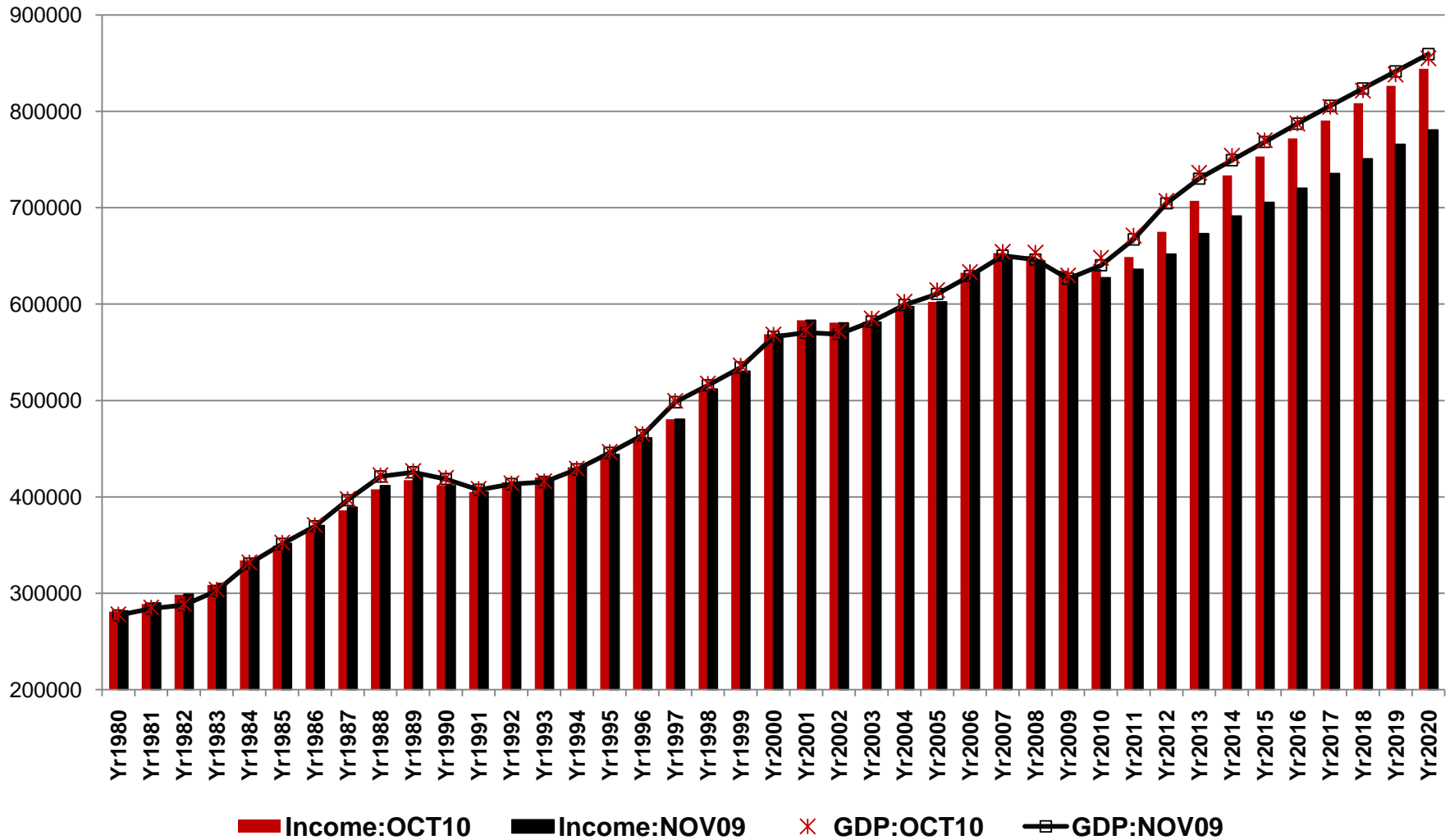
# ECONOMY.COM 2010 vs. 2009 FORECASTS

## NE Average Wage Rate as Percent of US



## ECONOMY.COM 2010 vs. 2009 FORECASTS

### NE REAL INCOME (Mil 2005\$) & GROSS DOMESTIC PRODUCT (Mil 2000\$)



# Preliminary 2011 CELT/RSP ISO-NE Annual Energy & Seasonal Peak Forecast

## Comparison of ISO-NE Preliminary CELT 2011 and CELT 2010 Annual Energy & Summer Peak Forecasts

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Change	Growth Rate
<b>Energy Forecast (GWh)</b>												
CELT2011	134160	135460	137960	139225	140825	142215	143585	144985	146395	147760	1511	1.1
CELT2010	131305	132370	134005	134655	136060	137280	138500	139810	141175	142520	1246	0.9
Difference	2855	3090	3955	4570	4765	4935	5085	5175	5220	5240		
<b>Summer 50/50 Peak Forecast (MW)</b>												
CELT2011	27075	27550	28095	28525	28970	29380	29775	30155	30525	30875	421	1.5
CELT2010	27190	27660	28165	28570	29025	29450	29785	30110	30430	30730	393	1.4
Difference	-115	-110	-70	-45	-55	-70	-10	45	95	145		
<b>Summer 90/10 Peak Forecast (MW)</b>												
CELT2011	29180	29695	30290	30765	31250	31705	32135	32555	32955	33335	462	1.5
CELT2010	29310	29835	30390	30840	31340	31810	32180	32545	32895	33225	435	1.4
Difference	-130	-140	-100	-75	-90	-105	-45	10	60	110		

Preliminary CELT2011 2010 energy and summer peaks are weather normal values.

CELT2010 2010 energy and summer peak are forecasts.

## Comparison of ISO-NE Preliminary CELT 2011 and CELT 2010 Winter Peak Forecasts

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Average Growth	
											Change	Rate
<b>Winter 50/50 Peak Forecast (MW)</b>												
CELT2011	22035	22255	22365	22510	22630	22750	22875	23000	23120	23240	134	0.6
CELT2010	22085	22225	22280	22400	22505	22610	22720	22835	22950	23070	109	0.5
Difference	-50	30	85	110	125	140	155	165	170	170		
<b>Winter 90/10 Peak Forecast (MW)</b>												
CELT2011	22715	22935	23050	23190	23310	23435	23555	23680	23800	23925	134	0.6
CELT2010	22765	22905	22960	23080	23185	23290	23400	23520	23635	23750	109	0.5
Difference	-50	30	90	110	125	145	155	160	165	175		

CELT2010 2010 preliminary CELT2011 2010/11 winter peaks are forecasts.

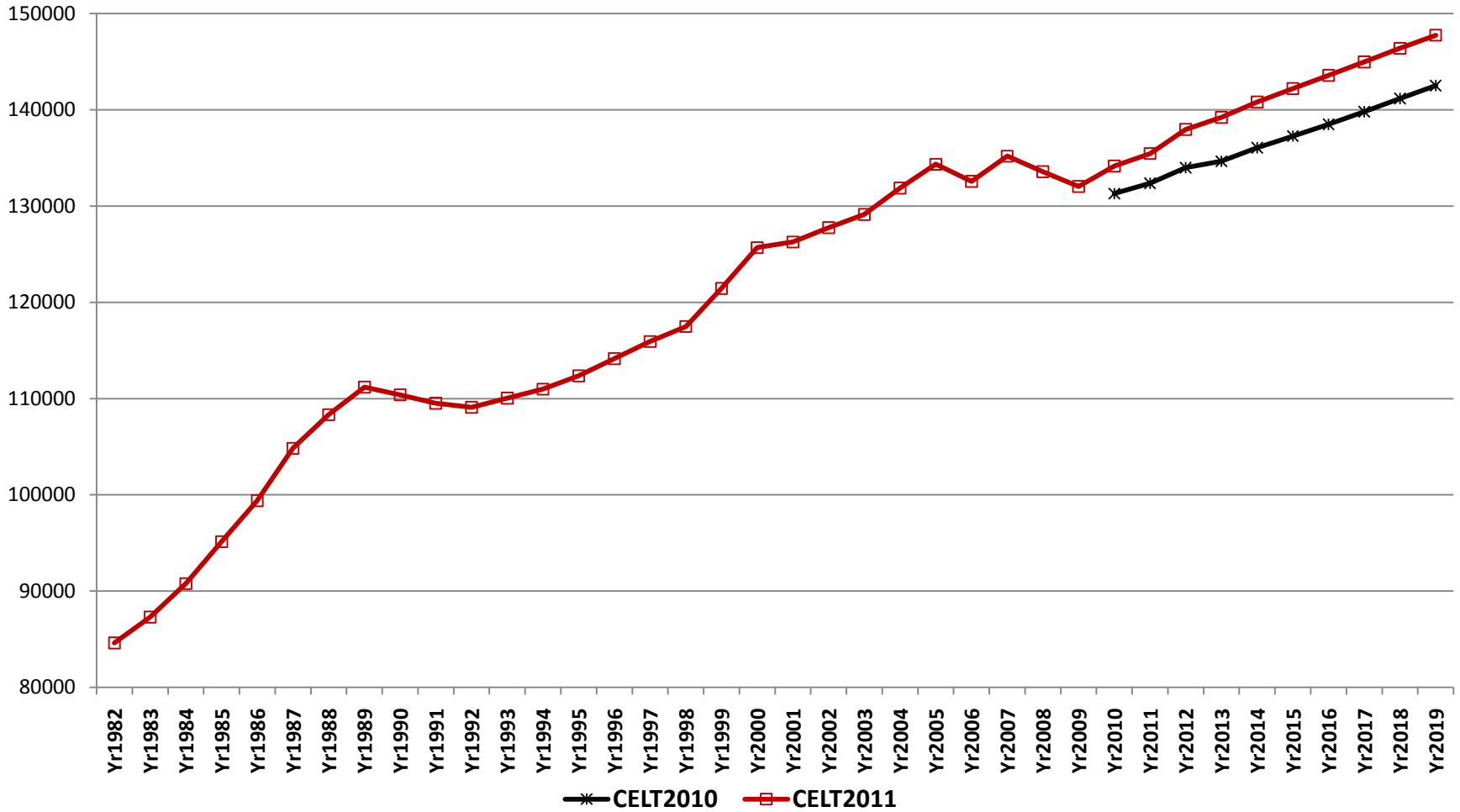
## Preliminary CELT 2011 Forecast and FCM Passive Demand Resources (PDR)

	Summer	Summer	Summer	Summer	Summer	Winter	Winter	Winter	Winter	Winter	Annual	Energy	Annual
	50/50	90/10	PDR	50/50	90/10	50/50	90/10	PDR	50/50	90/10	CELT	PDR	Energy
	CELT	CELT		Peak	Peak	CELT	CELT		Peak	Peak	Energy		Net PDR
	Peak	Peak		Net PDR	Net PDR	Peak	Peak		Net PDR	Net PDR			
2011	27550	29695	784	26766	28911	22255	22935	770	21485	22165	135460	4329	131131
2012	28095	30290	1073	27022	29217	22365	23050	1055	21310	21995	137960	5948	132012
2013	28525	30765	1298	27227	29467	22510	23190	1288	21223	21903	139220	7521	131699
2014	28970	31250	1298	27672	29952	22630	23310	1288	21343	22023	140830	8144	132686
2015	29380	31705	1298	28082	30407	22750	23435	1288	21463	22148	142215	8144	134071
2016	29775	32135	1298	28477	30837	22875	23555	1288	21588	22268	143590	8167	135422
2017	30155	32555	1298	28857	31257	23000	23680	1288	21713	22393	144985	8144	136841
2018	30525	32955	1298	29227	31657	23120	23800	1288	21833	22513	146395	8144	138251
2019	30875	33335	1298	29577	32037	23240	23925	1288	21953	22638	147760	8144	139616
2020	31215	33700	1298	29917	32402	23365	24045	1288	22078	22758	149150	8167	140982
CAGR	1.4	1.4		1.2	1.3	0.5	0.5		0.3	0.3	1.1		0.8

# ISO-NE Net Energy for Load (GWh)

## CELT 2011 Weather Normal 1982-2010 & Preliminary Forecast 2011-2019

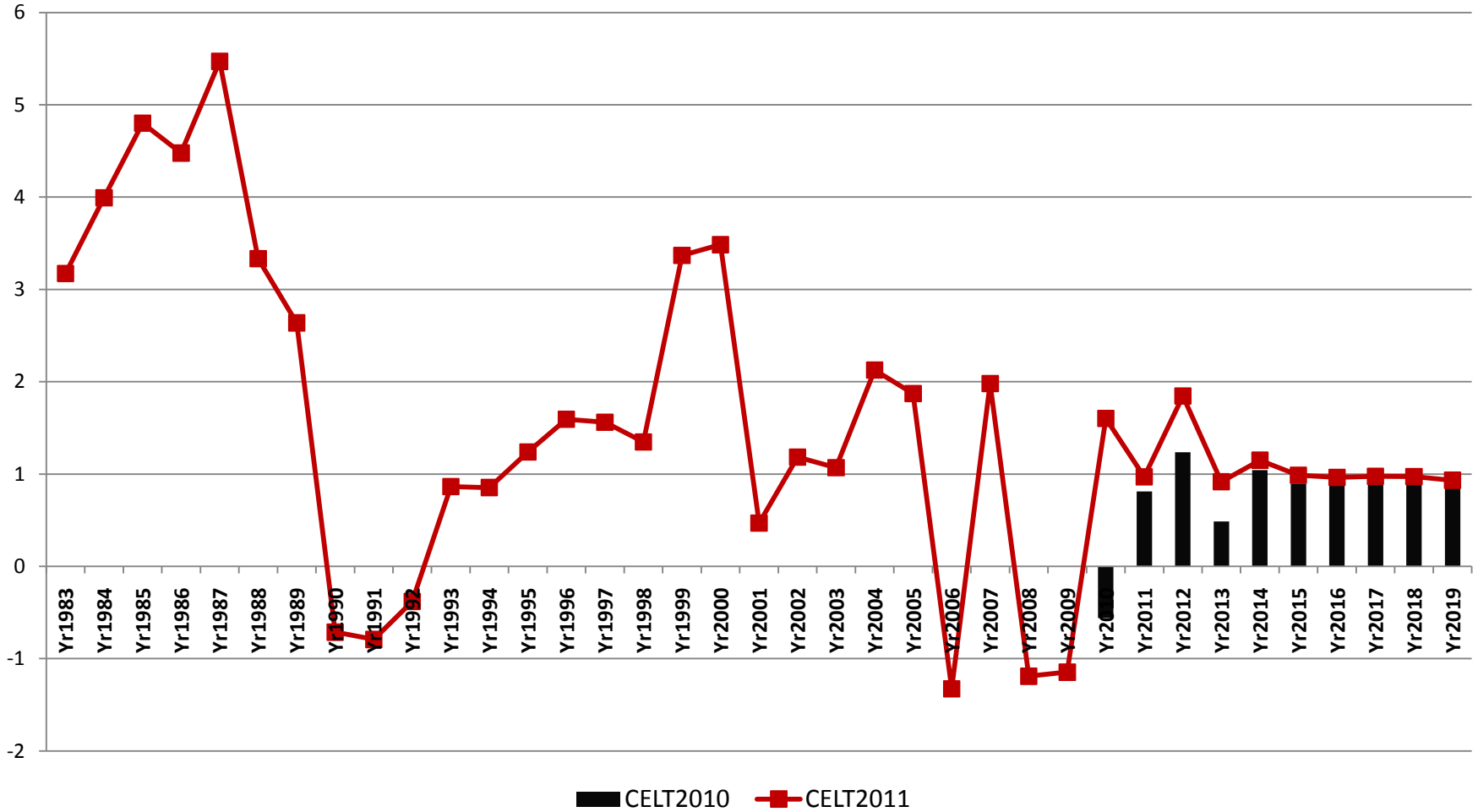
### CELT 2010 Forecast 2010-2019



# ISO-NE Energy Annual Percent Changes

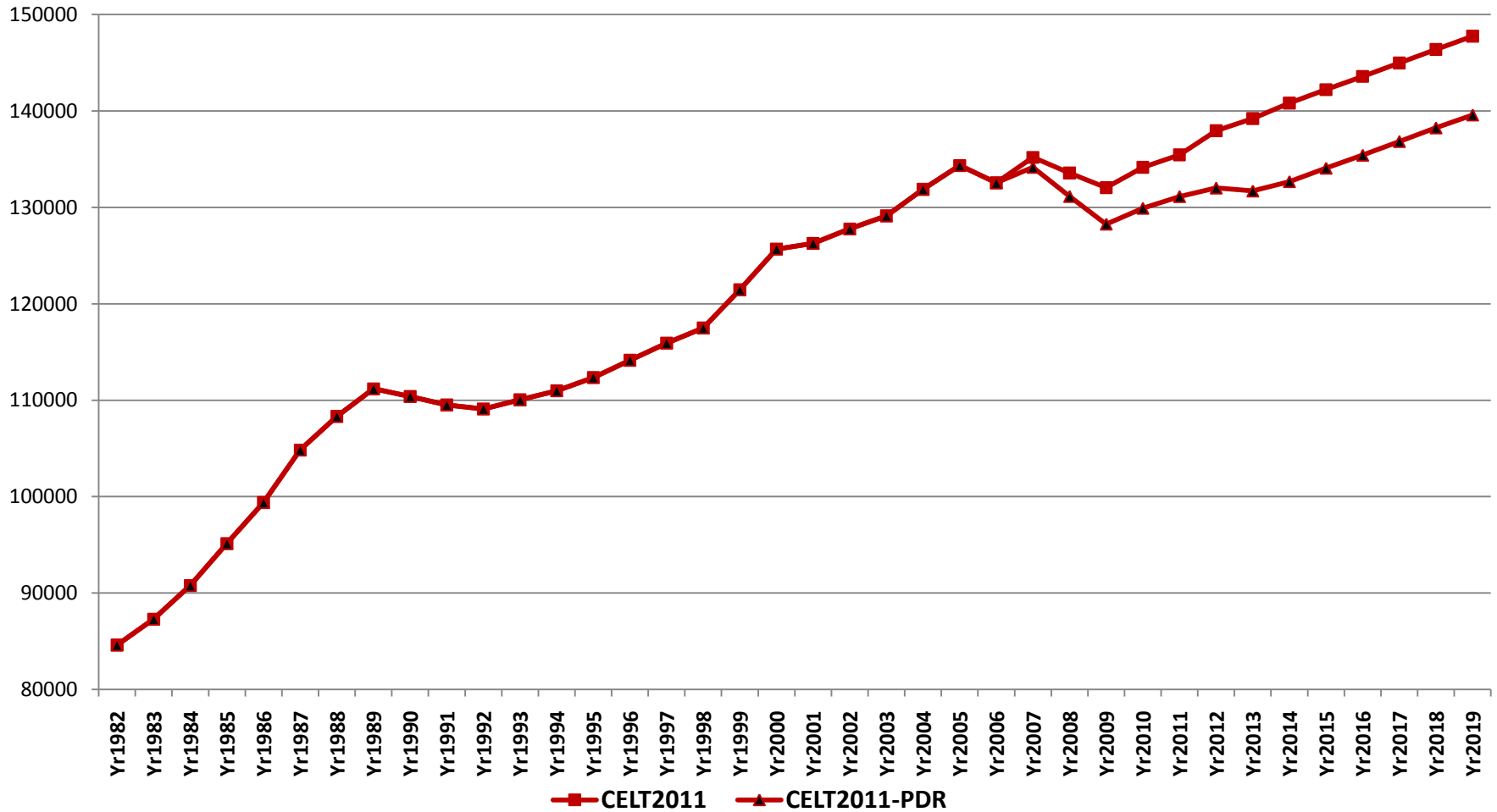
## CELT 2011 Weather Normal 1983-2010 & Preliminary Forecast 2011-2019

### CELT 2010 Forecast 2010-2019



# ISO-NE Net Energy for Load (GWh) Weather Normal 1982-2010

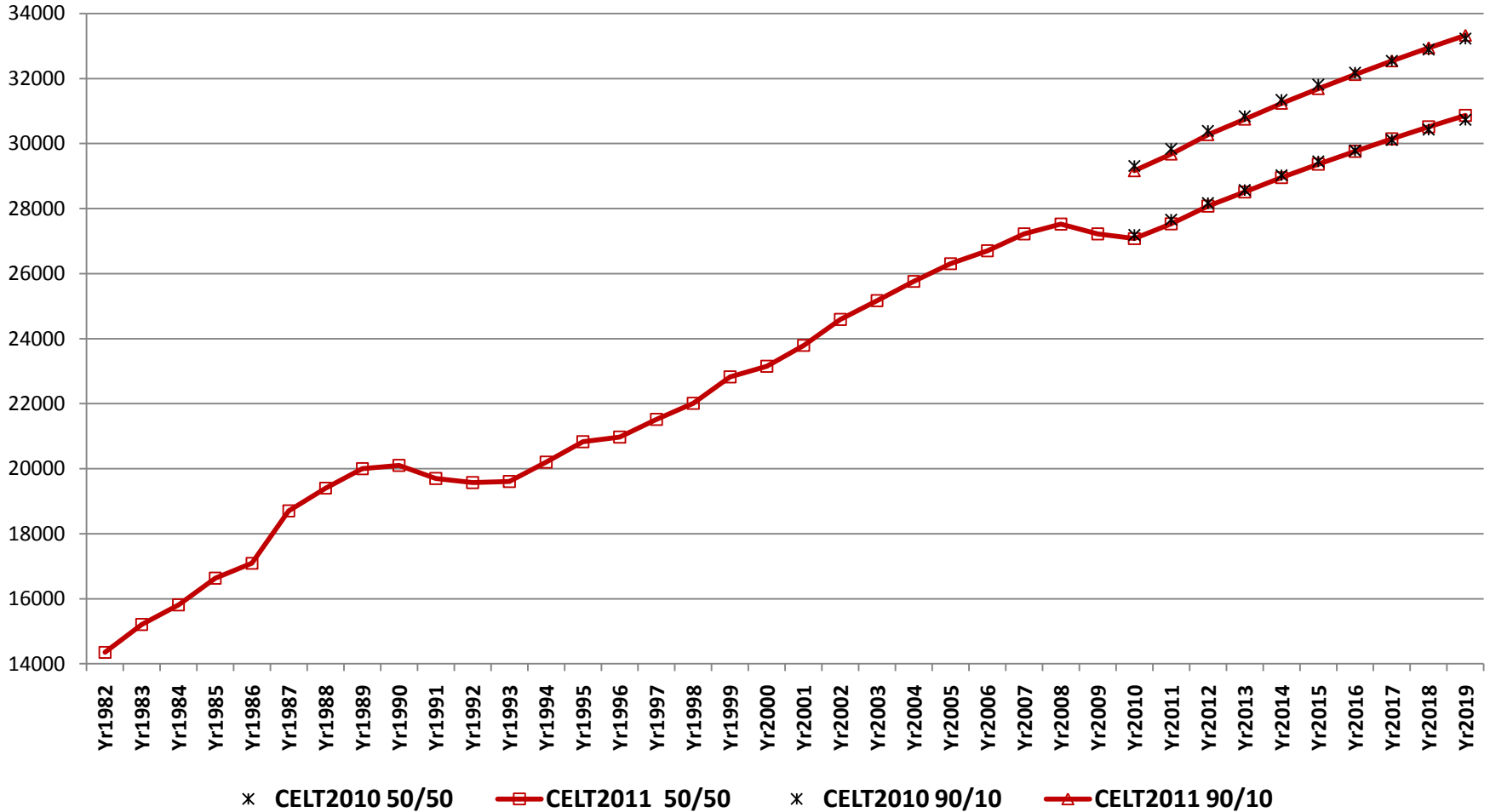
## Preliminary CELT 2011 & CELT 2011-Passive Demand Resources 2011-2019



# ISO-NE 50/50 and 90/10 Summer Peaks (MW)

## CELT 2011: Weather Normal 1992-2010 & Preliminary Forecast 2011-2019

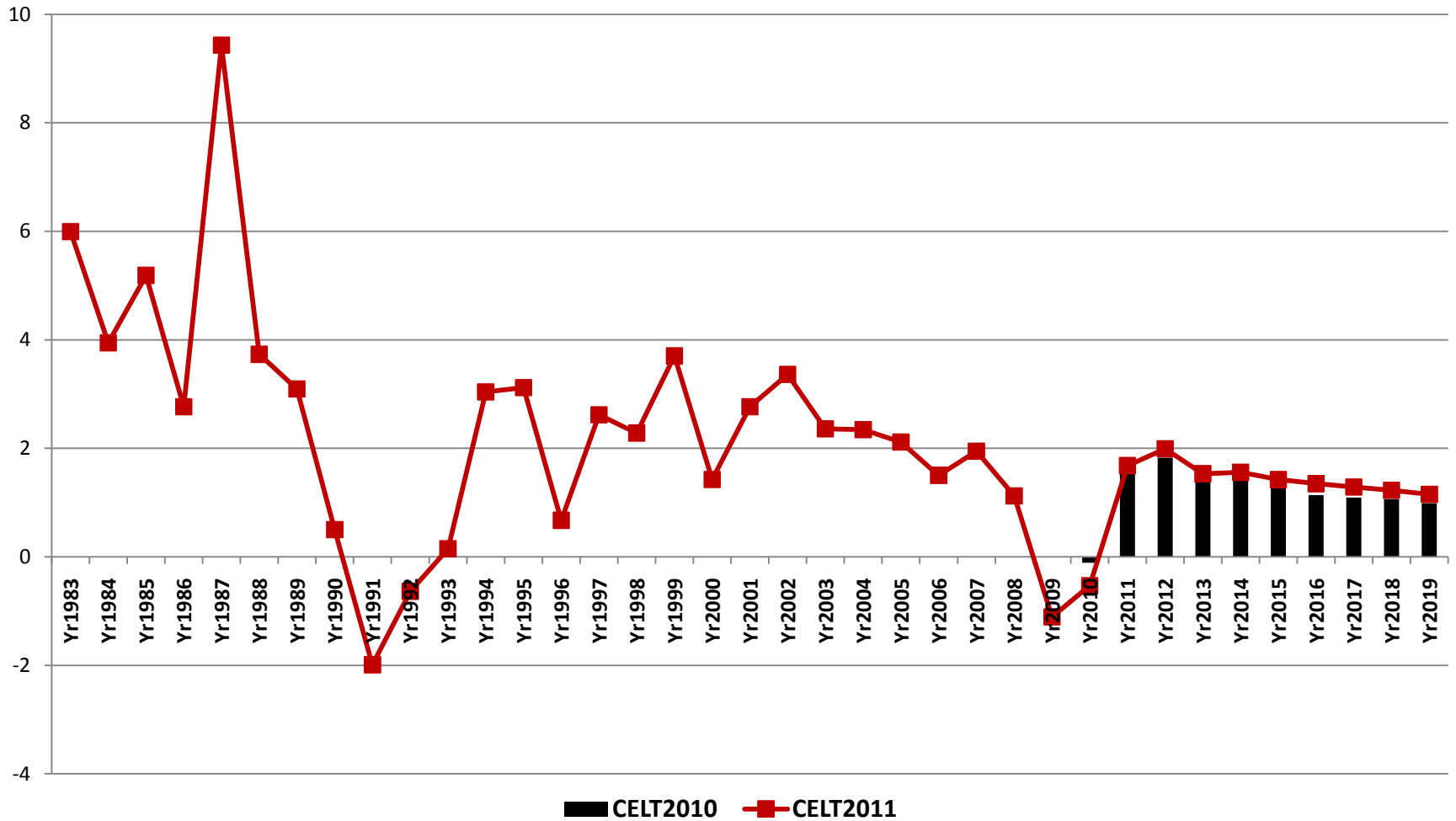
### CELT 2010: Forecast 2010-2019



# ISO-NE 50/50 Summer Peak Annual Percent Changes

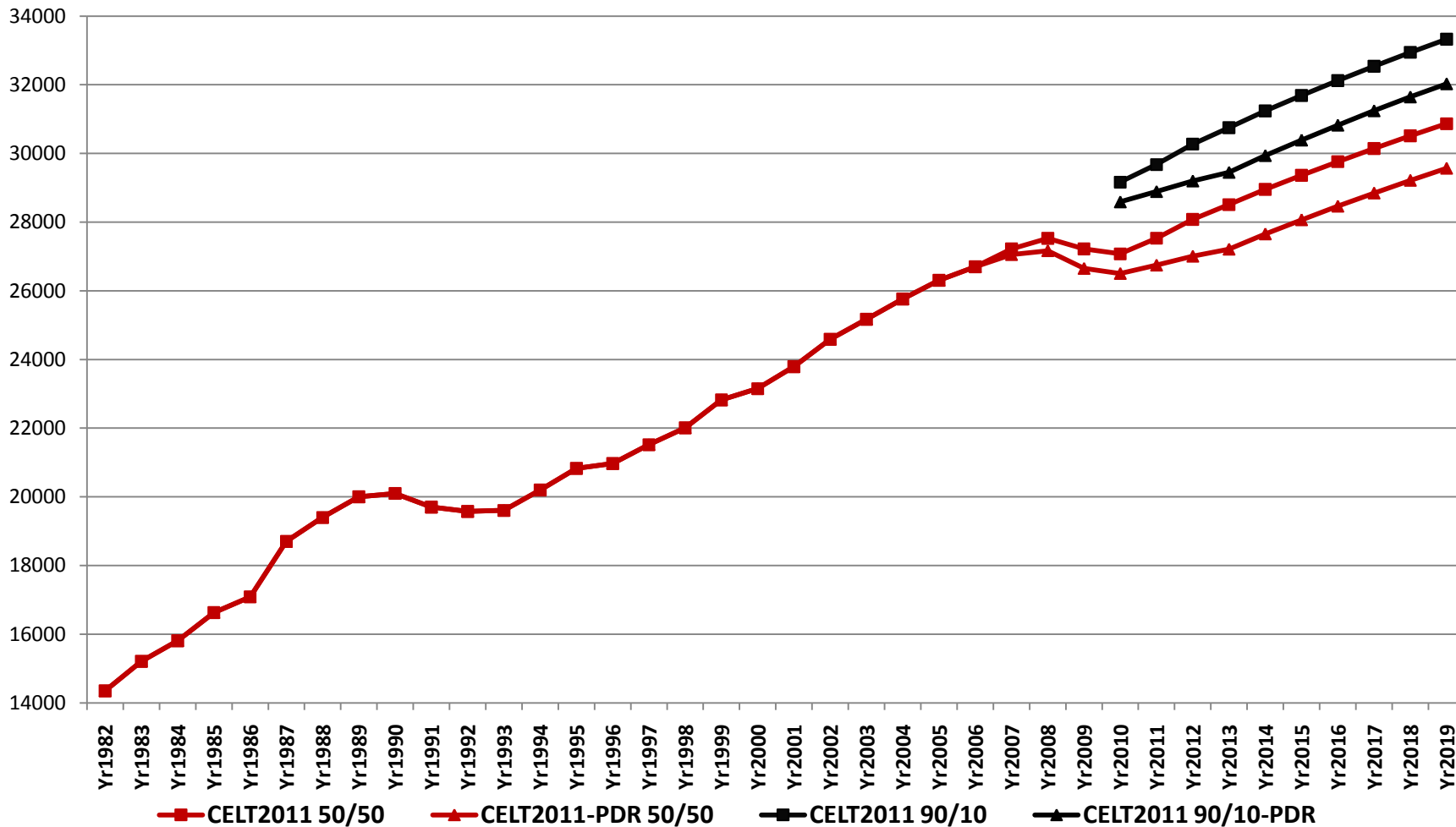
## CELT 2011 Weather Normal 1983-2010 & Preliminary Forecast 2011-2019

### CELT 2010 Forecast 2010-2019



## ISO-NE 50/50 and 90/10 Summer Peaks (MW) Weather Normal 1992-2010

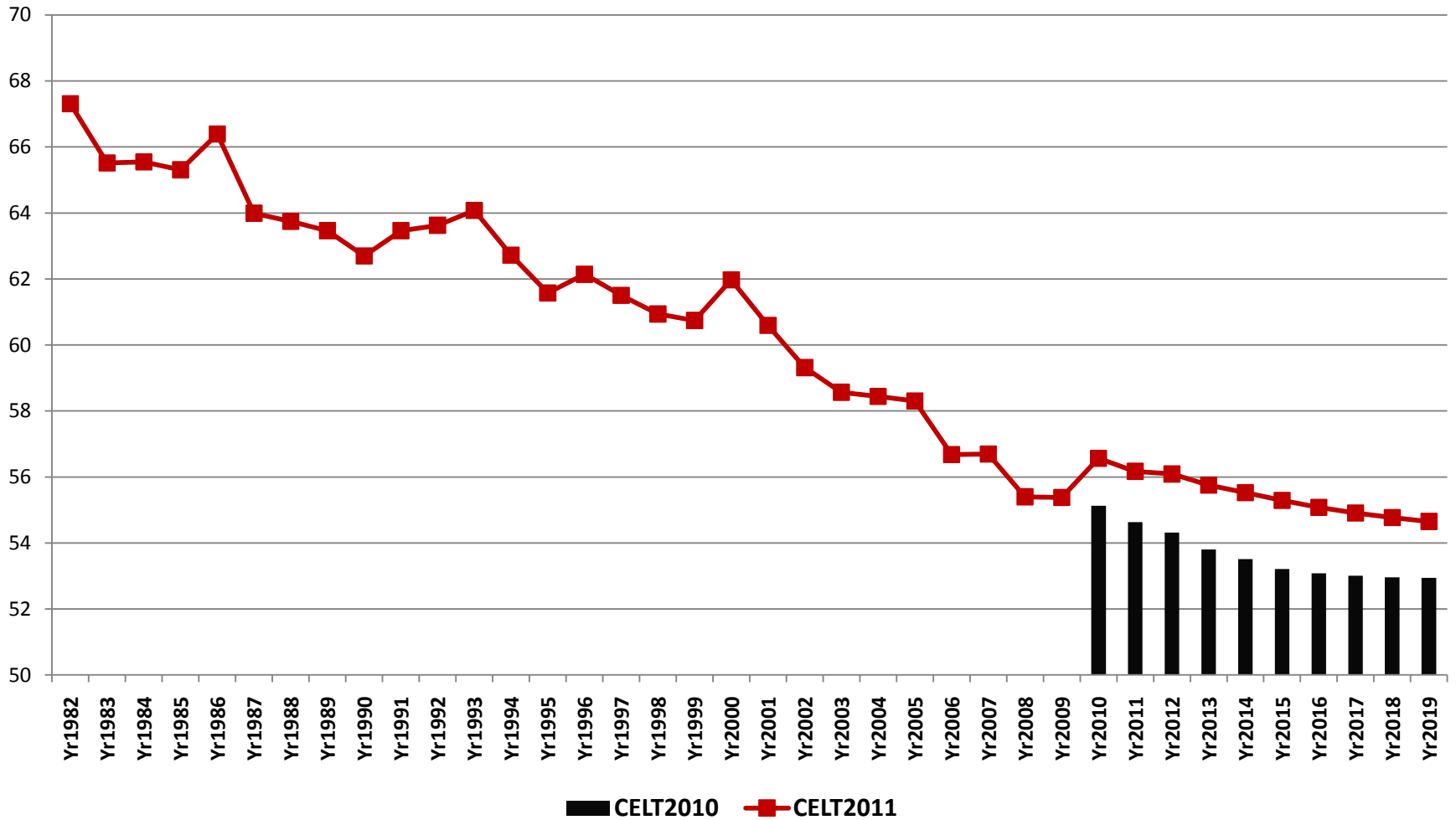
### Preliminary CELT 2011 & CELT 2011-Passive Demand Resources 2011-2019



# ISO-NE 50/50 Summer Peak Load Factor

## CELT 2011 Weather Normal 1982-2010 & Preliminary Forecast 2011-2019

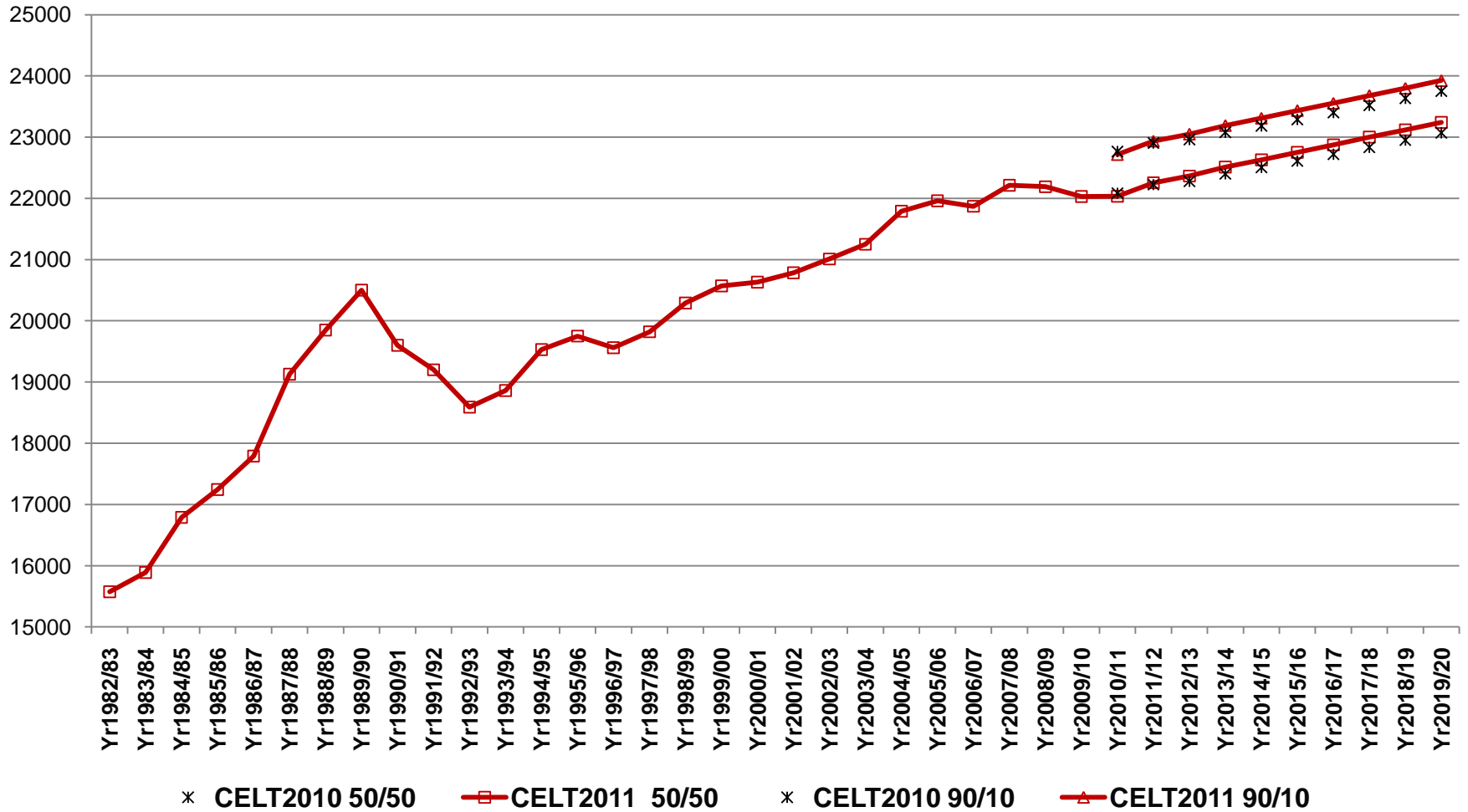
### CELT 2010 Forecast 2010-2019



# ISO-NE 50/50 and 90/10 Winter Peaks (MW)

## CELT 2011: Weather Normal 1982-2009 & Preliminary Forecast 2010-2019

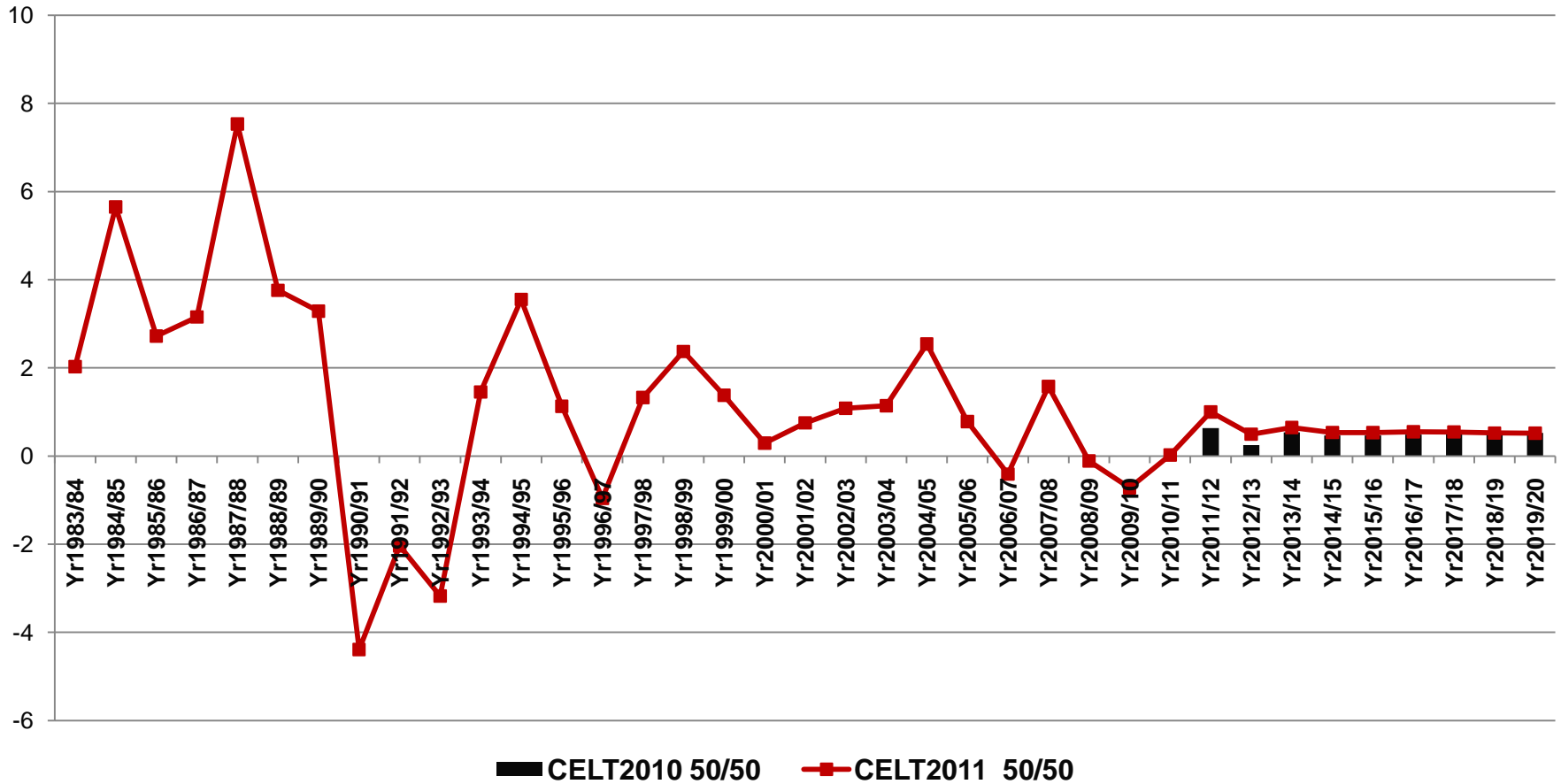
### CELT 2010: Forecast 2010-2019



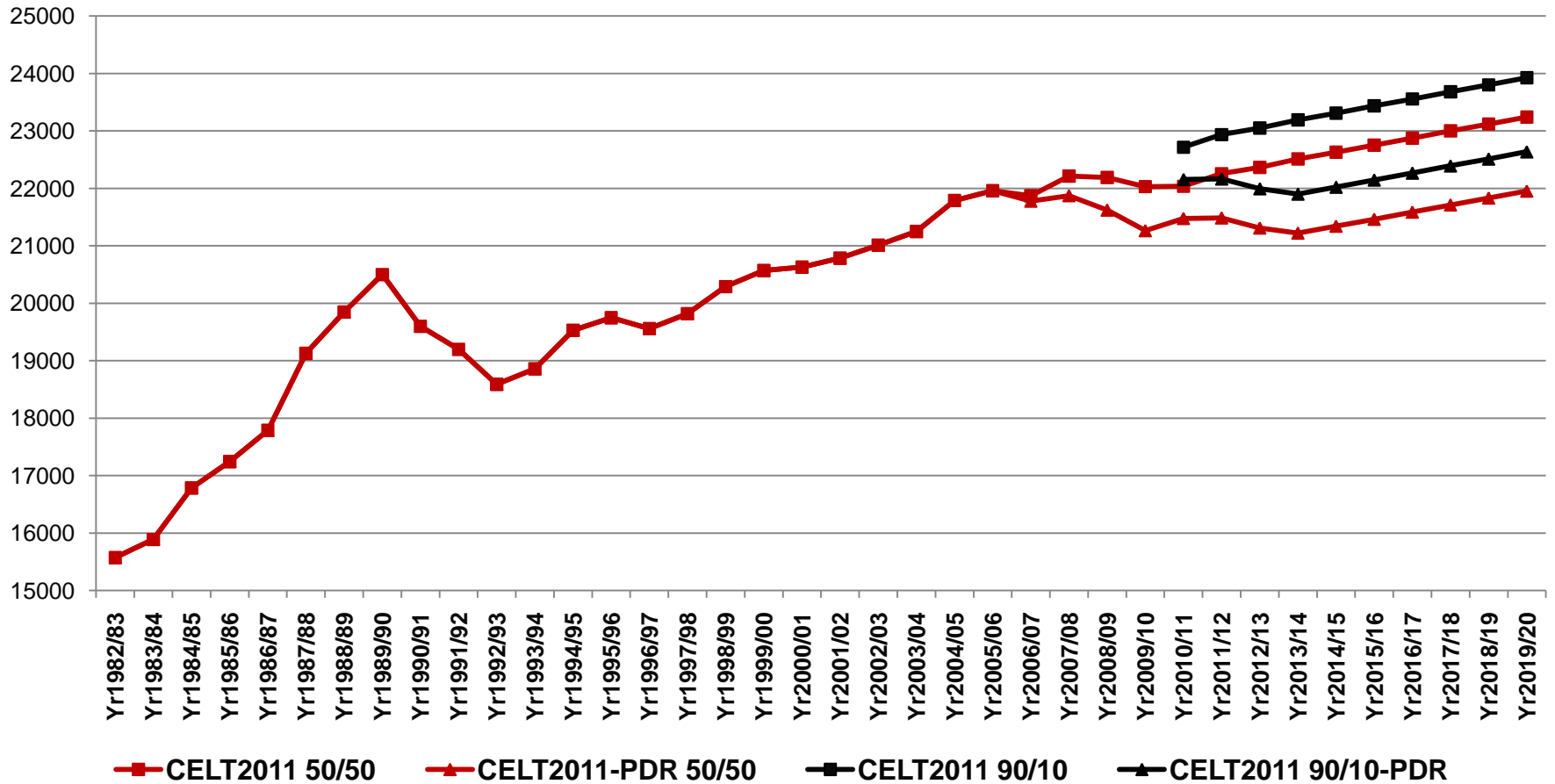
# ISO-NE 50/50 Winter Peak Annual Percent Changes

## CELT 2011 Weather Normal 1983-2010 & Preliminary Forecast 2011-2019

### CELT 2010 Forecast 2010-2019

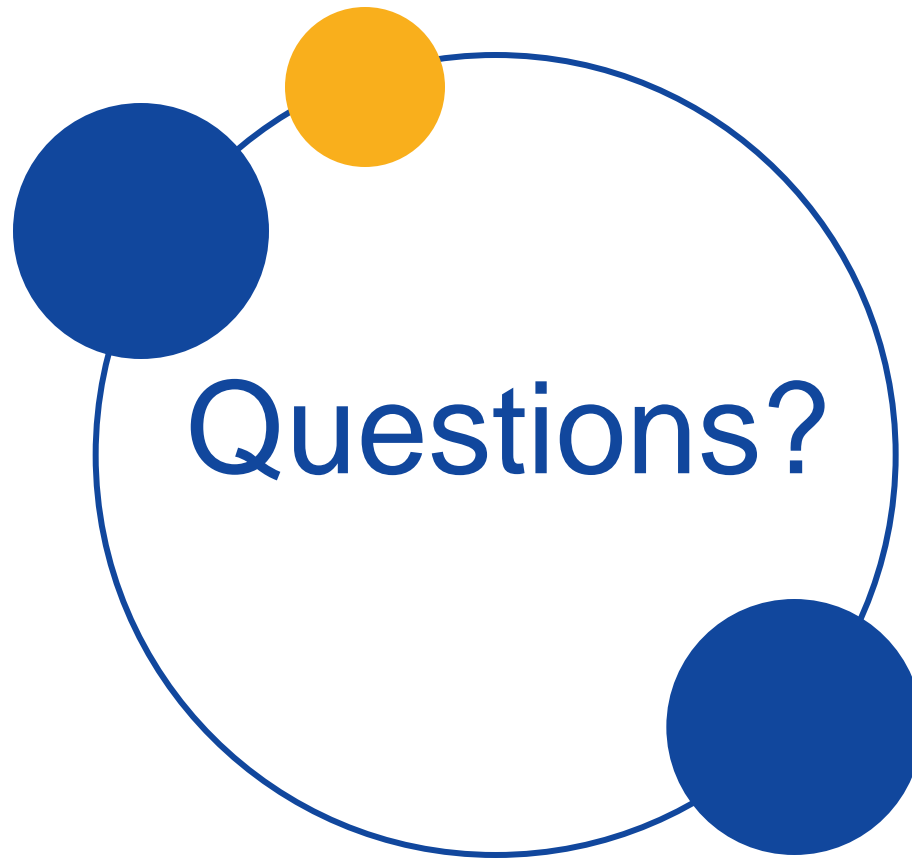


# ISO-NE 50/50 and 90/10 Winter Peaks Weather Normal 1992-2010 Preliminary CELT 2011 & CELT 2011-Passive Demand Resources 2011-2019



# Summary

- Updated economic forecast and historical load and weather inputs have resulted in higher forecasts of energy but similar forecasts of seasonal peak loads compared to RSP10
  - Energy is 2.4% higher (3090 GWh) than CELT2010 in 2011, growing to be 3.6% higher (5240 GWh) in 2019
  - 50/50 summer peak is 0.4% lower (110 MW) than CELT2010 in 2011, virtually the same in 2016, and 0.5% higher (145 MW) in 2019. The 90/10 summer peak differences are about the same as the 50/50 differences
  - Winter peak is 0.1% higher (30 MW) than CELT2010 in 2011, growing to be 0.7% higher (170 MW) in 2019



Questions?