

Agenda Item 2.3

PSPC Meeting 272

February 18, 2010

# Demand Resource Performance Assumptions for 2013/2014 (FCA4) ICR and Associated Values Calculations

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# Purpose of Presentation

- Review Demand Resource (DR) Performance calculation methodology used to calculate DR performance for the 2012/13 ICR calculation
- Review results of Summer 2009 DR Performance
- Review results of updated analysis applied to Existing Qualified DR for 2013/2014

# Events Used to Calculate Performance for FCA3 (from 2-19-2009 PSPC Meeting)

- August 1, 2006 OP4
- August 2, 2006 OP4
- August 15, 2007 Audit
- May 8, 2008 OP4
- August 20, 2008 Audit
- August 21, 2008 Audit
- August 22, 2008 Audit

Because they were system-wide events (except 5/8/2008) and occurred on the same month, the events above were considered a good set to use.

# Calculation Methodology

(from 2-19-2009 PSPC Meeting)

## Performance Calculations

- Ramp-time excluded
- Interrupted MW / Summer Qualified DRV MW (FCA 1)

# Results of FCA3 DR Performance Analysis

Load Zone Name	Demand Resource Type	Curtailed MWh	Expected MWh	Without Capping ME	With ME Resource
				Resource Performance	Performance Capped at 100%
				Performance (%)	Performance (%)
CT	REAL_TIME	803.820	1,072.651	75%	75%
	REAL_TIME_EG	863.161	1,078.058	80%	80%
<b>CT Total</b>		<b>1,666.981</b>	<b>2,150.709</b>	<b>78%</b>	<b>78%</b>
ME	REAL_TIME	488.841	161.750	302%	100%
	REAL_TIME_EG	423.873	338.095	125%	100%
<b>ME Total</b>		<b>912.713</b>	<b>499.845</b>	<b>183%</b>	<b>100%</b>
NEMA	REAL_TIME	111.230	142.393	78%	78%
	REAL_TIME_EG	84.126	103.348	81%	81%
<b>NEMA Total</b>		<b>195.356</b>	<b>245.741</b>	<b>79%</b>	<b>79%</b>
NH	REAL_TIME	5.383	6.940	78%	78%
	REAL_TIME_EG	-	-	-	-
<b>NH Total</b>		<b>5.383</b>	<b>6.940</b>	<b>78%</b>	<b>78%</b>
RI	REAL_TIME	11.010	15.600	71%	71%
	REAL_TIME_EG	0.957	4.428	22%	22%
<b>RI Total</b>		<b>11.967</b>	<b>20.028</b>	<b>60%</b>	<b>60%</b>
SEMA	REAL_TIME	6.261	11.435	55%	55%
	REAL_TIME_EG	26.681	53.377	50%	50%
<b>SEMA Total</b>		<b>32.942</b>	<b>64.812</b>	<b>51%</b>	<b>51%</b>
VT	REAL_TIME	9.705	9.926	98%	98%
	REAL_TIME_EG	0.462	1.260	37%	37%
<b>VT Total</b>		<b>10.166</b>	<b>11.186</b>	<b>91%</b>	<b>91%</b>
WCMA	REAL_TIME	45.919	74.045	62%	62%
	REAL_TIME_EG	67.398	100.795	67%	67%
<b>WCMA Total</b>		<b>113.317</b>	<b>174.840</b>	<b>65%</b>	<b>65%</b>
<b>Total</b>		<b>2,948.824</b>	<b>3,174.101</b>	<b>93%</b>	<b>80%</b>

# FCA3 DR Performance Summary

- Active DR performance is calculated as 93% using previously discussed methodology
- Capping ME Resources at 100% lowers overall performance of Active DR to 80%
- Applying Load Zone by DR Type performance values to Existing Qualified DR values results in an Active DR performance of 74%
- Overall Performance of DR with Passive Resources included is 82%

# 2009 Summer Performance Methodology

- Performance calculation of Summer 2009 Audit results follows the same methodology described on slide 4
- Sample of DR Assets/Resources Qualified for FCA1
- Interrupted MW / Summer Qualified DRV MW (FCA1)
- Ramp-time excluded

# Summer 2009 DR Performance Using Same Methodology as FCA3

Load Zone Name	DRType	Curtailed MWh	Expected MWh	Performance (%)	Capping at 100% Performance (%)
CT	REAL_TIME	257.768	325.051	79%	79%
	REAL_TIME_EG	178.004	120.715	147%	100%
<b>CT Total</b>		<b>435.772</b>	<b>445.766</b>	<b>98%</b>	<b>98%</b>
ME	REAL_TIME	266.608	72.610	367%	100%
	REAL_TIME_EG	246.315	111.910	220%	100%
<b>ME Total</b>		<b>512.923</b>	<b>184.520</b>	<b>278%</b>	<b>100%</b>
NEMA	REAL_TIME	4.627	17.444	27%	27%
	REAL_TIME_EG	47.587	47.516	100%	100%
<b>NEMA Total</b>		<b>52.214</b>	<b>64.960</b>	<b>80%</b>	<b>80%</b>
NH	REAL_TIME	1.964	2.976	66%	66%
<b>NH Total</b>		<b>1.964</b>	<b>2.976</b>	<b>66%</b>	<b>66%</b>
RI	REAL_TIME	0.165	7.800	2%	2%
	REAL_TIME_EG	-	1.312	0%	0%
<b>RI Total</b>		<b>0.165</b>	<b>9.112</b>	<b>2%</b>	<b>2%</b>
SEMA	REAL_TIME	2.641	4.558	58%	58%
	REAL_TIME_EG	11.457	12.156	94%	94%
<b>SEMA Total</b>		<b>14.098</b>	<b>16.714</b>	<b>84%</b>	<b>84%</b>
VT	REAL_TIME	3.655	3.538	103%	100%
	REAL_TIME_EG	0.395	0.630	63%	63%
<b>VT Total</b>		<b>4.050</b>	<b>4.168</b>	<b>97%</b>	<b>97%</b>
WCMA	REAL_TIME	17.917	21.614	83%	83%
	REAL_TIME_EG	31.183	35.564	88%	88%
<b>WCMA Total</b>		<b>49.100</b>	<b>57.178</b>	<b>86%</b>	<b>86%</b>
<b>Grand Total</b>		<b>1,070.285</b>	<b>785.394</b>	<b>136%</b>	<b>94%</b>

# DR Metric Updated to Include Summer 2009 Audit Results

- Updated event list

Event Dates	
8/1/2006	OP4
8/2/2006	OP4
8/15/2007	Audit
5/8/2008	OP4
8/20/2008	Audit
8/21/2008	Audit
8/22/2008	Audit
8/17/2009	Audit
8/18/2009	Audit
8/24/2009	Audit
8/25/2009	Audit

# Updated DR Performance Metric Including Summer 2009 Audit Results

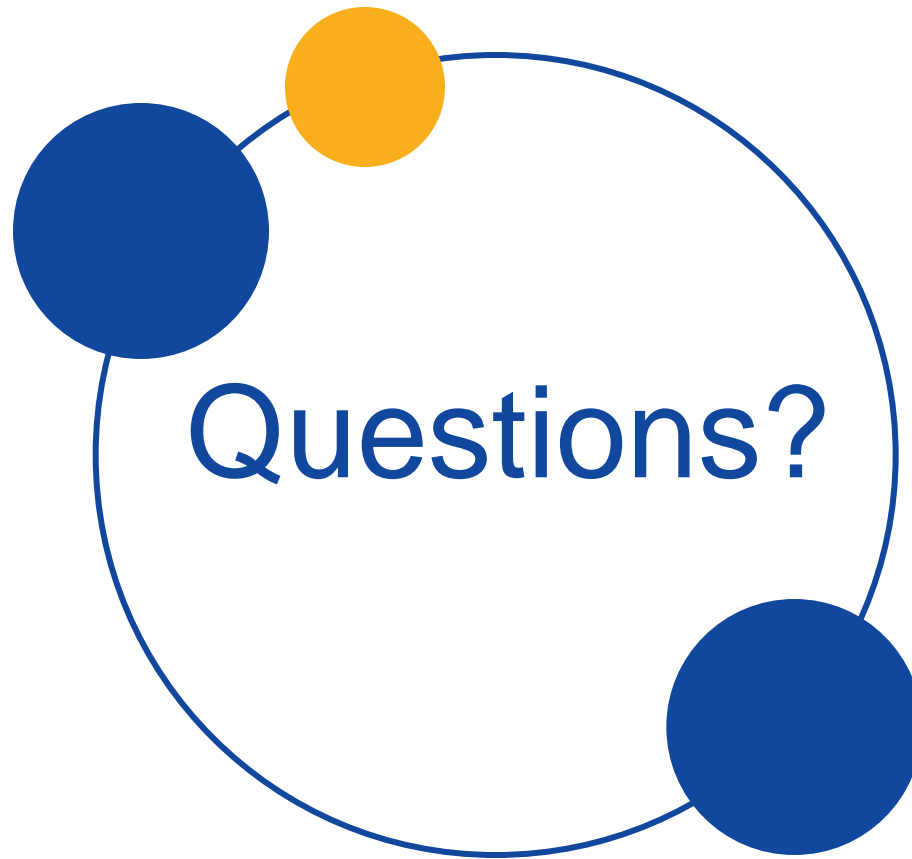
Load Zone Name	DRType	Curtailed MWh	Expected MWh	Capping at 100%	
				Performance (%)	Performance (%)
CT	REAL_TIME	1,061.588	1,397.702	76%	76%
	REAL_TIME_EG	1,041.165	1,198.773	87%	87%
<b>CT Total</b>		<b>2,102.753</b>	<b>2,596.475</b>	<b>81%</b>	<b>81%</b>
ME	REAL_TIME	755.448	234.360	322%	100%
	REAL_TIME_EG	670.188	450.005	149%	100%
<b>ME Total</b>		<b>1,425.636</b>	<b>684.365</b>	<b>208%</b>	<b>100%</b>
NEMA	REAL_TIME	115.857	159.837	72%	72%
	REAL_TIME_EG	131.713	150.864	87%	87%
<b>NEMA Total</b>		<b>247.570</b>	<b>310.701</b>	<b>80%</b>	<b>80%</b>
NH	REAL_TIME	7.347	9.916	74%	74%
<b>NH Total</b>		<b>7.347</b>	<b>9.916</b>	<b>74%</b>	<b>74%</b>
RI	REAL_TIME	11.175	23.400	48%	48%
	REAL_TIME_EG	0.957	5.740	17%	17%
<b>RI Total</b>		<b>12.132</b>	<b>29.140</b>	<b>42%</b>	<b>42%</b>
SEMA	REAL_TIME	8.902	15.993	56%	56%
	REAL_TIME_EG	38.138	65.533	58%	58%
<b>SEMA Total</b>		<b>47.040</b>	<b>81.526</b>	<b>58%</b>	<b>58%</b>
VT	REAL_TIME	13.360	13.464	99%	99%
	REAL_TIME_EG	0.857	1.890	45%	45%
<b>VT Total</b>		<b>14.216</b>	<b>15.354</b>	<b>93%</b>	<b>93%</b>
WCMA	REAL_TIME	63.836	95.659	67%	67%
	REAL_TIME_EG	98.581	136.359	72%	72%
<b>WCMA Total</b>		<b>162.417</b>	<b>232.018</b>	<b>70%</b>	<b>70%</b>
<b>Grand Total</b>		<b>4,019.109</b>	<b>3,959.494</b>	<b>102%</b>	<b>83%</b>

# FCA4 DR Performance Summary

- Active DR performance using previously discussed methodology is calculated as 102% (93% for FCA3)
- Capping ME Resources at 100% lowers overall performance of Active DR to 83% (80% for FCA3)
- Applying Load Zone by DR Type performance values to FCA4 Existing Qualified DR values results in an Active DR performance of 75% (74% for FCA3)
- Overall Performance of DR with Passive Resources included is 84% (82% for FCA3)

# Proposed DR Availability to be Modeled in the 2013/14 ICR Calculation

Load Zone	On-Peak		Seasonal Peak		RT Demand Response		RT Emergency Gen		Total	
	MW	Availability (%)	MW	Availability (%)	MW	Availability (%)	MW	Availability (%)	MW	Availability (%)
MAINE	58.483	100	-	-	279.165	100	35.023	100	372.671	100
NEW HAMPSHIRE	61.842	100	-	-	45.409	74	39.135	74	146.386	85
VERMONT	71.766	100	-	-	33.443	99	18.124	45	123.333	92
CONNECTICUT	115.672	100	250.727	100	291.940	76	298.901	87	957.240	89
RHODE ISLAND	68.612	100	1.727	100	51.417	48	93.078	17	214.834	51
SOUTH EAST MASSACHUSETTS	112.545	100	1.727	100	153.524	56	78.961	58	346.757	71
WEST CENTRAL MASSACHUSETTS	94.516	100	19.188	100	142.505	67	100.221	72	356.430	79
NORTH EAST MASSACHUSETTS & BOSTON	208.904	100	-	-	254.596	72	148.989	87	612.489	85
<b>Total New England</b>	<b>792.340</b>	<b>100</b>	<b>273.369</b>	<b>100</b>	<b>1251.999</b>	<b>76</b>	<b>812.432</b>	<b>73</b>	<b>3130.140</b>	<b>84</b>



Questions?