

Demand Response: Preliminary Model Values for 2015 IRM Studies

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Topics

- ◆ **Background**
- ◆ **NYISO Recommended Preliminary SCR Model Values**
- ◆ **Appendix**

Background

- ◆ **The NYISO calculates the SCR zonal performance factors based on historical performance using ICAP measures.**
- ◆ **ICS applies additional adjustment factors:**
 - *ICS adjusts adjustment factors up/down based on prior year's SCR event response (when data is available):*
 - *Translation Factor*
 - *Effective Capacity Value*
 - *Fatigue Factor*

**Effective Performance Factor = Zonal Performance Factor *
Translation Factor * Effective Capacity Value * Fatigue Factor**

**SCR Model Value MW = SCR ICAP MW * Effective Performance
Factor**

SCR Adjustment Factors used in IRM Studies

- ◆ **Translation Factor (ACL to CBL)**
 - ◆ **The Translation Factor is used to adjust performance based on ICAP measures to a CBL equivalent.**
- ◆ **Effective Capacity Value**
 - ◆ **The Effective Capacity Value adjustment factor is used to account for performance changes beyond the minimum required 4-hour performance period during an event.**
- ◆ **Fatigue Factor**
 - ◆ **The Fatigue Factor adjustment factor is applied to address concerns that fatigue may occur if SCRs are deployed frequently.**

Zonal Performance Factors and Adjustment Factors

- ◆ **Zonal Performance Factors were calculated based on Summer 2014 and Winter 2013-2014 test responses.**
- ◆ **There were no NYISO Demand Response Events called during Summer 2014. Performance was based on one-hour SCR performance test responses.**
- ◆ **The NYISO recommends using the same Translation Factor (ACL to CBL) and Fatigue Factor as used last year since no additional information is available to recommend a change:**
 - ◆ **Translation Factor (ACL to CBL):**
 - *NYISO recommends keeping the Translation Factor (for ACL to CBL) at 0.90*
 - ◆ **Fatigue Factor:**
 - *NYISO recommends keeping the Fatigue Factor at 1.00*

Zonal Performance Factors and Adjustment Factors, continued

- ◆ **Since there were no four-hour events during Summer 2014 it makes it difficult to assess performance for purposes of reliability studies and therefore the NYISO recommends adjusting the Effective Capacity Value.**
 - *The Effective Capacity Value was used in the past to account for performance change beyond the minimum required four-hour performance period during an event.*
 - *The NYISO recommends broadening the definition of Effective Capacity Value to also account for years that did not have events, such as 2014.*

- ◆ **For 2015, the NYISO recommends using an Effective Capacity Value of 0.85**
 - *In 2014, the Effective Capacity Value was 0.95*

Zonal Performance Factors and Adjustment Factors, continued

- ◆ **Using an Effective Capacity Value factor of 0.85 will result in an Effective Performance of 68.4% in 2015 which closely aligns with that used last year.**
 - *In 2014, the Effective Performance was 65.5%*

SCR Model Values – NYISO Recommendation

Changing Effective Capacity Value Factor to 0.85

Column	A	B	C	D	E	F	G	
Superzone	SCR Enrollment 2015 Gold Book Forecast *	ACL Based Performance Factors	Translation Factor (ACL to CBL)**	Effective Capacity Value***	Fatigue Factor**	Model Value MW (=Col A * Col B * Col C * Col D * Col E)	Effective Performance % (=Col B * Col C * Col D * Col E)	
1	A-F	618.4	0.9357	0.90	0.85	1.00	442.7	71.6%
2	G-I	67.3	0.8783	0.90	0.85	1.00	45.2	67.2%
3	J	369.4	0.8415	0.90	0.85	1.00	237.8	64.4%
4	K	69.3	0.8115	0.90	0.85	1.00	43.0	62.1%
5	Total	1124.4					768.7	68.4%

*** Consistent with past practice, the 2015 Gold Book Forecast will be replaced with actual July 2015 enrollment when information is available after June 8, 2015.**

**** The NYISO recommends keeping the same Translation Factor and Fatigue Factor used last year**

***** The NYISO recommends adjusting the Effective Capacity Value to 0.85**

Comparison of 2014 and 2015 Model Values using the NYISO Recommended 85% Effective Capacity Value Factor

Superzone	2014 ACL Based Performance Factors	2015 ACL Based Performance Factors	ACL Based Performance Factors Comparison	Effective Performance (%)		Effective Performance (%) Comparison	Model Value (MW)*		Model Value (MW) Comparison
	2014	2015	2014 to 2015	2014	2015	2014 to 2015	2014	2015	2014 to 2015
A-F	0.8486	0.9357	0.0871	72.6%	71.6%	-1.0%	450.2	442.7	-7.5
G-I	0.7388	0.8783	0.1395	63.2%	67.2%	4.0%	42.8	45.2	2.4
J	0.6492	0.8415	0.1923	55.5%	64.4%	8.9%	207.6	237.8	30.2
K	0.6717	0.8115	0.1398	57.4%	62.1%	4.7%	40.3	43.0	2.7
Total				65.5%	68.4%	2.9%	740.9	768.7	27.8

*** Consistent with past practice, the 2015 Gold Book Forecast will be replaced with actual July 2015 enrollment when information is available after June 8, 2015.**

Appendix

Comparison of Effective Performance Factors based on Effective Capacity Values ranging from 95% to 80% (no change to Translation Factor @ 90% or Fatigue Factor @ 100%)

NYISO RECOMMENDATION

Column	A	B	D	F	G					
Superzone	SCR Enrollment 2015 Gold Book Forecast *	ACL Based Performance Factors	Effective Capacity Value @ 0.85	Model Value MW (=Col A * Col B * Col C * Col D * Col E)	Effective Performance % (=Col B * Col C * Col D * Col E)	Effective Performance % 2014	Effective Performance % Comparison	Model Value MW 2014	Model Value (MW) Comparison	
Row							2014 to 2015		2014 to 2015	
1	A-F	618.4	0.9357	0.85	442.7	71.6%	72.6%	-1.0%	450.2	-7.5
2	G-I	67.3	0.8783	0.85	45.2	67.2%	63.2%	4.0%	42.8	2.4
3	J	369.4	0.8415	0.85	237.8	64.4%	55.5%	8.9%	207.6	30.2
4	K	69.3	0.8115	0.85	43.0	62.1%	57.4%	4.7%	40.3	2.7
5	Total	1124.4			768.7	68.4%	65.5%	2.9%	740.9	27.8

Column	A	B	D	F	G					
Superzone	SCR Enrollment 2015 Gold Book Forecast *	ACL Based Performance Factors	Effective Capacity Value @ 0.95	Model Value MW (=Col A * Col B * Col C * Col D * Col E)	Effective Performance % (=Col B * Col C * Col D * Col E)	Effective Performance % 2014	Effective Performance % Comparison	Model Value MW 2014	Model Value (MW) Comparison	
Row							2014 to 2015		2014 to 2015	
1	A-F	618.4	0.9357	0.95	494.7	80.0%	72.6%	7.4%	450.2	44.5
2	G-I	67.3	0.8783	0.95	50.5	75.1%	63.2%	11.9%	42.8	7.7
3	J	369.4	0.8415	0.95	265.8	71.9%	55.5%	16.4%	207.6	58.2
4	K	69.3	0.8115	0.95	48.1	69.4%	57.4%	12.0%	40.3	7.8
5	Total	1124.4			859.1	76.4%	65.5%	10.8%	740.9	118.2

Column	A	B	D	F	G					
Superzone	SCR Enrollment 2015 Gold Book Forecast *	ACL Based Performance Factors	Effective Capacity Value @ 0.90	Model Value MW (=Col A * Col B * Col C * Col D * Col E)	Effective Performance % (=Col B * Col C * Col D * Col E)	Effective Performance % 2014	Effective Performance % Comparison	Model Value MW 2014	Model Value (MW) Comparison	
Row							2014 to 2015		2014 to 2015	
1	A-F	618.4	0.9357	0.90	468.7	75.8%	72.6%	3.2%	450.2	18.5
2	G-I	67.3	0.8783	0.90	47.9	71.1%	63.2%	7.9%	42.8	5.1
3	J	369.4	0.8415	0.90	251.8	68.2%	55.5%	12.7%	207.6	44.2
4	K	69.3	0.8115	0.90	45.6	65.7%	57.4%	8.3%	40.3	5.3
5	Total	1124.4			813.9	72.4%	65.5%	6.9%	740.9	73.0

Column	A	B	D	F	G					
Superzone	SCR Enrollment 2015 Gold Book Forecast *	ACL Based Performance Factors	Effective Capacity Value @ 0.80	Model Value MW (=Col A * Col B * Col C * Col D * Col E)	Effective Performance % (=Col B * Col C * Col D * Col E)	Effective Performance % 2014	Effective Performance % Comparison	Model Value MW 2014	Model Value (MW) Comparison	
Row							2014 to 2015		2014 to 2015	
1	A-F	618.4	0.9357	0.80	416.6	67.4%	72.6%	-5.2%	450.2	-33.6
2	G-I	67.3	0.8783	0.80	42.5	63.2%	63.2%	0.0%	42.8	-0.3
3	J	369.4	0.8415	0.80	223.8	60.6%	55.5%	5.1%	207.6	16.2
4	K	69.3	0.8115	0.80	40.5	58.4%	57.4%	1.0%	40.3	0.2
5	Total	1124.4			723.5	64.3%	65.5%	-1.2%	740.9	-17.4

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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