

## Base Case Modeling Assumptions for 2011-2012 NYCA IRM Requirement Study

<b>Parameter</b>	<b>2010 Study Modeling Assumptions</b>	<b>Recommended 2011 Study Modeling Assumptions</b>	<b>Basis for Recommended 2011 Assumptions</b>	<b>Possible Impact on IRM</b>
Peak Load	33,025 MW for NYCA, 11,725 MW for zone J, and 5368 MW for zone K.	To be provided by NYISO on October 1, 2010.	Forecast based on examination of 2010 weather normalized peaks. Top three external Area peak days aligned with NYCA. The interim modeling is done using the Gold Book Forecast of 33,160 MW for NY, 11,775 MW for NYC and 5,384 MW for LI.	-
Load Shape Model	2002 Load Shape	2002 Load Shape	After evaluating 2009 data, analysis indicates 2002 load shape is an appropriate representation for this analysis.	
Load Uncertainty Model	Statewide and zonal model updated to reflect current data.	Statewide and zonal model updated to reflect current data.	Method used and accepted by NYISO and ICS based on collected data and input from LIPA and Con Ed ( <i>see Attachments A and A-1</i> ).	
Existing Generating Unit Capacities	Updated DMNC test values	Updated DMNC test values	2010 Gold Book units	
Proposed New Units	Those listed on <i>Attachments B and B1</i> .	Those listed on <i>Attachments B and B1</i> .	Units built since the 2010 Gold Book and those non-renewable units with Interconnection agreements signed by August 1 <sup>st</sup> . Renewables based on RPS agreements and ICS input.	

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Wind Resource Modeling	(1,326 MW) Derived from hourly wind data with average Summer Peak Hour availability factor of approximately 11%.	(1,xxx MW) Derived from hourly wind data with average Summer Peak Hour availability factor of approximately yy%.	Based on collected hourly wind data. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	
Solar Resource Modeling	Hourly solar readings converted to MW output with average Summer Peak Hour availability factor of approximately 65%. (30 MW)	Add Phase II of LIPA project??)	Based on collected hourly solar data. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	
Retirements	Poletti 1 retirement (891 MW 2/10), Greenidge Unit 3 (52 MW 12/09), and Westover Unit 7 (40.2 MW 12/09).	None in Gold Book.	2010 Gold Book plus units indicated by PSC notification.	
Forced & Partial Outage Rates	5-year (2004-08) GADS data. (Those units with less than five years data could use available representative data.)	5-year (2005-09) GADS data. (Those units with less than five years data could use available representative data.)	Most recent 5-year period ( <i>see Attachments C and C-1</i> ).	
Planned Outages	Based on schedules received by NYISO & adjusted for history.	Based on schedules received by NYISO & adjusted for history.	Updated schedules.	
Summer Maintenance	Continue with approximately 150 MW after reviewing last year's data.	Use approximately zzz MW after reviewing last year's data.	Review of most recent data.	
Combustion Turbines Ambient Derate	Derate based on provided temperature correction curves.	Derate based on provided temperature correction curves.	Operational history indicates derates in line with manufacturer's curves.	
Environmental Impacts	No impact on unit availability due to RGGI . The base case	No impact on unit availability due to RGGI . The base case assumes	.	

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	assumes that any forthcoming NOx RACT rule will not require compliance by summer 2010.	that any forthcoming NOx RACT rule will not require compliance by summer 2011.		
Non-NYPA Hydro Capacity Modeling	45% derating.	Cc % derating.	Review of historic and most recent data.	
Special Case Resources	2575 MW (July 10) based on 3 year historical growth rate. Monthly variation based on historical experience. Limit to 4 calls per month in July and August for DEC limited generation. (about 30 hour total). See SCR determinations <i>in Attachment F</i> .	vvvv MW (July 10) based on NYISO growth rate forecast. Monthly variation based on historical experience. Limit to 4 calls per month in July and August for DEC limited generation. (about 30 hour total). See SCR determinations <i>in Attachment F</i> .	Those sold for the program, discounted to historic availability. and distributed according to zonal performance. Methodology for determination of derates has changed to account for more accurate peak hour performance. ... See SCR determinations <i>in Attachment F and F-1</i> .	
EDRP Resources	329 MW registered; modeled as 148 MW in July and Aug and proportional to monthly peak load in other months. Limit to 5 calls per month.	aaa MW registered; modeled as bbb MW in July and Aug and proportional to monthly peak load in other months. Limit to 5 calls per month.	Those registered for the program, discounted to historic availability. (45% overall) July & August values calculated from 2010 July and August registrations.	
External Capacity - Purchases	Grandfathered amounts of 50 MW from NE, 1080 MW from PJM and 1090 MW from Quebec. Equivalent <sup>1</sup> Contracts modeled.	Grandfathered amounts of 50 MW from NE, 1080 MW from PJM and 1090 MW from Quebec. Contracts modeled on border interfaces.	Grandfathered contracts per FERC.	

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Capacity - Sales	In addition to the long term firm sales of 303 MW, include known firm contracts of 641 MW from NE FCM market. Equivalent Contracts modeled.	In addition to the long term firm sales of 303 MW, include known firm contracts of ddd MW as a result of NE FCM market auctions. Contracts modeled on border interfaces.	Other firm contracts are becoming known, such as from neighbor's forward capacity markets.	
Capacity Wheel-throughs	None modeled	None modeled	There are no market mechanisms that allow capacity wheels through NYCA	
EOPs (other than SCR and EDRP)	700 MW of non-SCR/EDRP MWs. <i>See Attachment D.</i>	eee MW of non-SCR/EDRP MWs. <i>See Attachment D.</i>	Based on TO information, measured data, and NYISO forecasts.	
Interface Limits	Based on 2009 Operating Study, 2009 Operations Engineering Voltage Studies, 2009 Comprehensive Planning Process, and additional analysis.	Based on 2010 Operating Study, 2010 Operations Engineering Voltage Studies, 2010 Comprehensive Planning Process, and additional analyses including interregional planning initiatives.	NYISO engineering studies and additional analysis and input from other external Control Areas. <i>See Attachments E and E-1</i>	
New Transmission Capability	Linden VFT - 300 MW.	New ???? Without the loop flow switch on, it is appropriate to model HQ to NE connections.	Based on NYISO analysis and model provided by gggggggg..	
Transmission Cable Forced Outage Rate	All existing Cable EFORs updated on LI and NYC to reflect 5 year history.	All existing Cable EFORs updated on LI and NYC to reflect 5 year history.	Based on TO analysis.	
Unforced Capacity Deliverability Rights (UDR)	UDRs have been issued for the Cross Sound Cable, Neptune cable, and Linden VFT Project.	UDRs have been issued for the Cross Sound Cable, Neptune cable, and Linden VFT Project.	Contracted amounts of capacity are confidential and are included as capacity internal to NYCA.	

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<b>Model Version</b>	Version 2.98	Version 3.01	Per testing and recommendation by ICS.	
<b>Outside World Area Models</b>	Single Area representations for Ontario and Quebec. Three zones modeled for PJM. Five zones modeled for New England derived from 14 zones provided.	Single Area representations for Ontario and Quebec. Three zones modeled for PJM. Fourteen zones modeled for New England.	The load and capacity data (including zonal information if available) is provided by the neighboring Areas. This updated data is then adjusted as described in Policy 5.	
<b>Reserve Sharing between Areas</b>	All Control Areas have indicated that they will share reserves equally among all. Loop Flow switch(s) are in the “No” position to not allow a Control Area to send capacity through one system and back into itself in order to avoid the congestion that could be relieved by transmission projects.	All Control Areas have indicated that they will share reserves equally among all.	Per NPCC CP-8 working group assumption.	

Range: Low < 0.5%, Medium 0.5% - 1%, High > 1%