

**DRAFT 24**  
**For Discussion Purposes Only**  
**Base Case Modeling Assumptions for**  
**2010 RNA Requirement Study**

<b>Parameter</b>	<b>Recommended 2010 Study Modeling Assumptions</b>	<b>Basis for Recommended 2010 Assumptions</b>	<b>Same as 2010-2011 IRM<sup>1</sup>?</b>	<b>Potential Impact on Results</b>
Peak Load	2010 Gold Book with energy efficiency adjustment included for both the MARS and power flow base cases will be considered. No SCRs or EDRPs are included in the power flow base cases.	Forecast based on examination of 2009 weather normalized peaks. Top three peak days of external system aligned with NYCA for MARS analysis. (Scenario will use a higher load)	No, Update per 2010 Gold Book.	
Load Shape Model	2002 Load Shape, constant over ten year period.	After evaluating 2008 actual load data, analysis indicates 2002 load shape is an appropriate representation for this analysis.	Yes	
Load Uncertainty Model	Statewide and zonal model updated to reflect current data as developed for the recently completed 2010-2011 IRM and held constant over 10 year period.	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> ) for the recently completed 2010-2011 IRM.	Yes	

<sup>1</sup> 2010-2011 IRM Assumption Matrix approved by NYSRC Executive Committee 8/14/09 is used as the starting point for 2010 RNA

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Existing Generating Unit Capacities	Updated DMNC test values held constant over ten year period.	2010 Gold Book values.	No, Update per 2010 Gold Book	
Proposed New Units	Projects listed in attachment B <del>and B1</del> .	Units in-service since the 2009 Gold Book and those that pass the RNA Base Case Screening process.	No, Update per 2010 Gold Book and RNA Screening	
Wind Resource Modeling	Derived from hourly wind data with average Summer Peak Hour availability factor of approximately 11%.	Based on collected hourly wind data. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	Yes	
Solar Resource Modeling	Hourly solar readings converted to MW output with average Summer Peak Hour availability factor of approximately 65%. (30 MW)	Based on collected hourly solar data from LIPA. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	Yes	
Retirements	Poletti 1 retirement (891 MW 2/10), Greenidge Unit 3 (52 MW 12/09), and Westover Unit 7 (40.2 MW 12/09). Other units as confirmed by March 1, 2010.	2010 Gold Book plus units indicated by PSC notification.	<a href="#">No, Update per 2010 Gold Book</a>	
Forced & Partial Outage Rates	5-year (2005-09) GADS data. (Those units with less than five years data could use available representative data.) . Held constant over 10 year period.	Most recent 5-year period as determined for 2010-2011 IRM. <i>(see Attachments C and C-1).</i>	No, Update with most recent data	
Planned Outages	Based on schedules received by NYISO & adjusted for history per the recently	Updated schedules included for 2010-2011 IRM Study.	Yes	

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM <sup>1</sup> ?	Potential Impact on Results
	completed 2010-2011 IRM.			
Summer Maintenance	Continue with approximately 150 MW after reviewing last year's data per the recently completed 2010-2011 IRM and hold constant over 10 year period.	No basis for change after review of most recent data.	Yes	
Combustion Turbines Ambient Derate	Derate based on provided temperature correction curves per the recently completed 2010-2011 IRM and hold constant over 10 year period.	Operational history indicates derates in line with manufacturer's curves.	Yes	
Environmental Impacts	Study as scenarios.		N/A	
Non-NYPA Hydro Capacity Modeling	45% derating across 10 year period.	Review of historic data.	Yes	
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 in Attachment F per the recently completed 2010-2011 IRM. Held constant over 10 year period.	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 in Attachment F and F-1.	Yes	
EDRP Resources	Forecast as per the <a href="#">2010-2009</a> Gold Book and ESPWG discussion and held constant over 10 year period. 329 MW registered; modeled as 148 MW in July and Aug and proportional to	Those registered for the program, discounted to historic availability. (45% overall) July & August values	Yes	

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM <sup>1</sup> ?	Potential Impact on Results
	monthly peak load in other months per the recently completed 2010-2011 IRM. Limit to 5 calls per month.	calculated from 2009 July and August registrations.		
External Capacity - Purchases	Firm, grandfathered and External CRIS Rights are modeled as contracts. External ties are set to individual capability limits respecting simultaneous impact capability.	Per 2010 Gold Book	No, Modeled as actual contracts.	
Capacity - Sales	Sales will be modeled as <a href="#">Equivalent</a> <del>€</del> contracts <sup>2</sup> . Hold constant over 10 year period.	Per 2010 Gold Book.	No, Update per 2010 Gold Book	
Capacity Wheel-throughs	Transactions currently committed to Forward Capacity Markets that will flow through NY will be modeled.		No, Committed transactions will be modeled.	
EOPs (other than SCR and EDRP)	700 MW of non-SCR/EDRP MWs per the recently completed 2010-2011 IRM. <i>See Attachment D.</i> Hold constant over 10 year period.	Based on TO information, measured data, and NYISO forecasts.	Yes	
Interface Limits	Based on <a href="#">2009-2010</a> Operating Study, <a href="#">2009 Operations Engineering</a> , <a href="#">NYISO Voltage Studies</a> , <a href="#">2009-2010</a> Comprehensive Planning Process, and additional analysis.  Transfer limit analysis done in RNA for critical interfaces. External system limits	NYISO engineering studies and additional analysis and input from other external Control Areas. <i>See Attachments E and E-1</i>	No, Update per RNA's Transmission Security Assessment	

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<sup>2</sup> Equivalent contracts are modeled to remove capacity from the zone where the contracts originate and derate the interface tie where the capacity exits New York.

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	from input from neighboring systems.			
New Transmission Capability	Linden VFT - 300 MW  2010 Gold Book Firm schedule. Non Firm plans included if needed for base case solution, as per procedure manual.	Based on NYISO analysis.	No, Update per 2010 Gold Book and per procedures manual.	
Topology	Potential changes to topology to be developed in the transmission system analysis and modeling assumptions finalization. Modifications to include the addition of Phase 2 HVDC and Highgate and the outage of BP-76 until 12/31/2012.		No, Updated per transmission adequacy analysis.	
Transmission Cable Forced Outage Rate	All existing Cable EFORs updated on LI and NYC to reflect 5 year history per the recently completed 2010-2011 IRM. Hold constant over 10 year period.	Based on TO analysis.	Yes	
Unforced Capacity Deliverability Rights (UDR)	UDRs have been issued for the Cross Sound Cable, Neptune cable, and Linden VFT Project. Hold constant over 10 year period.	Contracted amounts of capacity are confidential and are included as capacity internal to NYCA.	Yes	
Model Version	Version 2.98	Per testing and recommendation by ICS.	Yes	

<p>Outside World Area Models</p>	<p>Single Area representations for Ontario and Quebec, multiple zones modeled for PJM and New England based on CP-8 provided topology.</p> <p>Utilize publically available load and capacity data for the External Areas to modify and populate a ten year MARS database at the external areas current reserve margin requirements.</p>	<p>Based on best available data.</p>	<p>No, External tie ratings are restored.</p>	
<p>Reserve Sharing between Areas</p>	<p>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.</p>	<p>NPCC CP-8 working group has identified this arrangement as more representative. GE has performed analysis on loop flow switch issue. NYISO has issued white paper on this topic.</p>	<p>Yes</p>	

**Attachment B: 2010 RNA Assumptions Matrix  
New Unit Additions for Base Case**

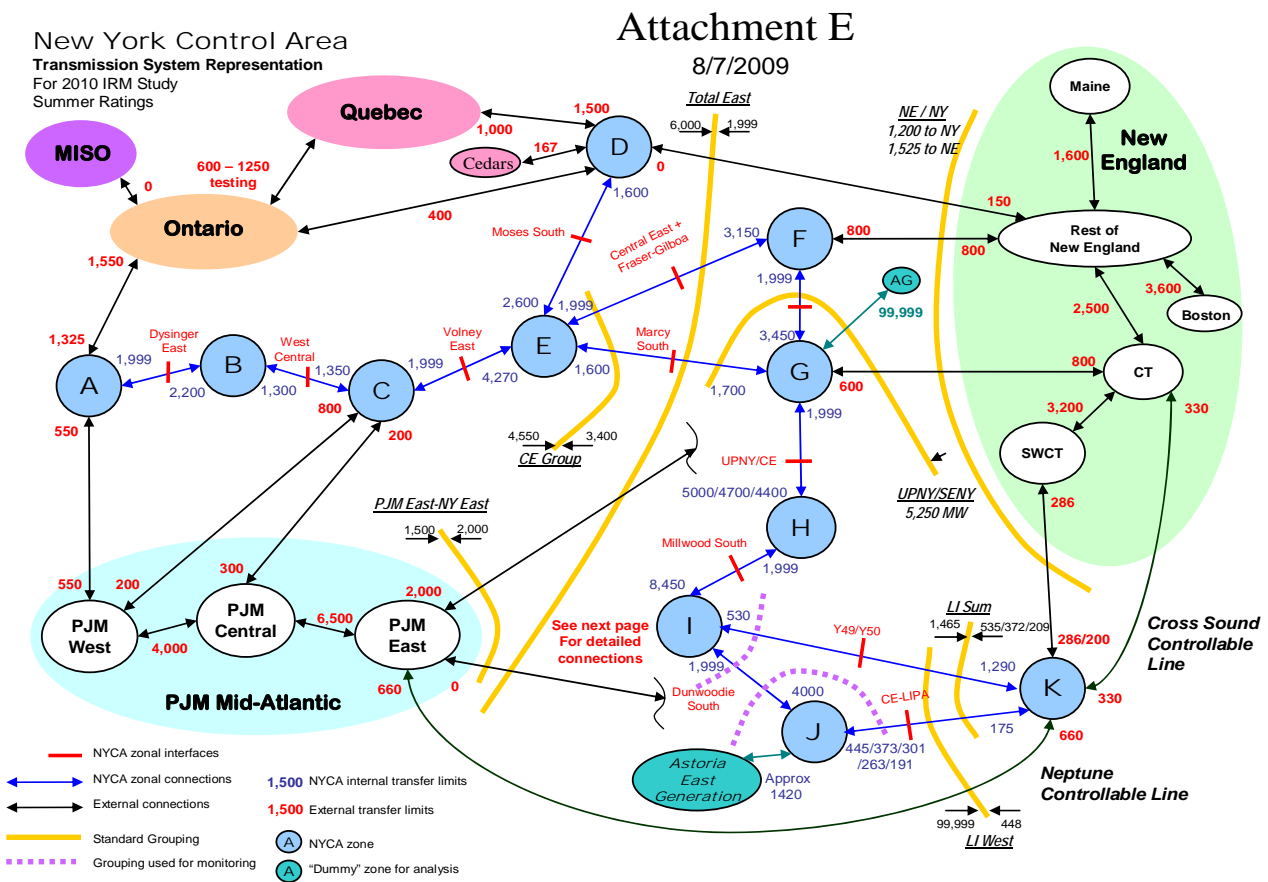
	Queue	Project Name	2010	2011	2012	2013	Total MW
<b>New Thermal Units</b>							
	69	Empire Generating (July 2010)	635				635
	232	Bayonne Energy (June 2011)		512.5			512.5
	308	Astoria Energy II (June 2011)		550			550
	237A	Chautauqua Landfill (Feb 2010)	6.4				6.4
	N/A <sup>(1)</sup>	Riverbay (June 2010)	24				24
<b>New Thermal Units Sub-Total</b>			<b>665.4</b>	<b>1062.5</b>	<b>0</b>	<b>0</b>	<b>1727.9</b>
<b>New Wind</b>							
	234	Steel Winds II (Nov 2010)	15				15
<b>New Wind Sub-Total</b>			<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Unit Upgrades</b>							
	185	Blenheim-Gilboa Unit 4 uprate (June 2010)	30				30
	216	Nine Mile Point II (June 2012)			168		168
	127A	Munnsville Wind Power (Dec 2013)				6	6
<b>Unit Upgrades Sub-Total</b>			<b>30</b>	<b>0</b>	<b>168</b>	<b>6</b>	<b>204</b>
<b>Other</b>							
	260	Stephentown 20 MW Flywheel (Sept. 2010) <sup>(2)</sup>					
<b>Retired Units</b>							
<b>Retired Units</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Grand Total</b>			<b>710.4</b>	<b>1062.5</b>	<b>168</b>	<b>6</b>	<b>1946.9</b>

Notes:

(1) Riverbay did not go through the NYISO Interconnection study process since it is connected to a non-FERC jurisdictional line.

(2) Stepentown is modeled as a voltage regulation resource.

To be updated as part of RNA Study.

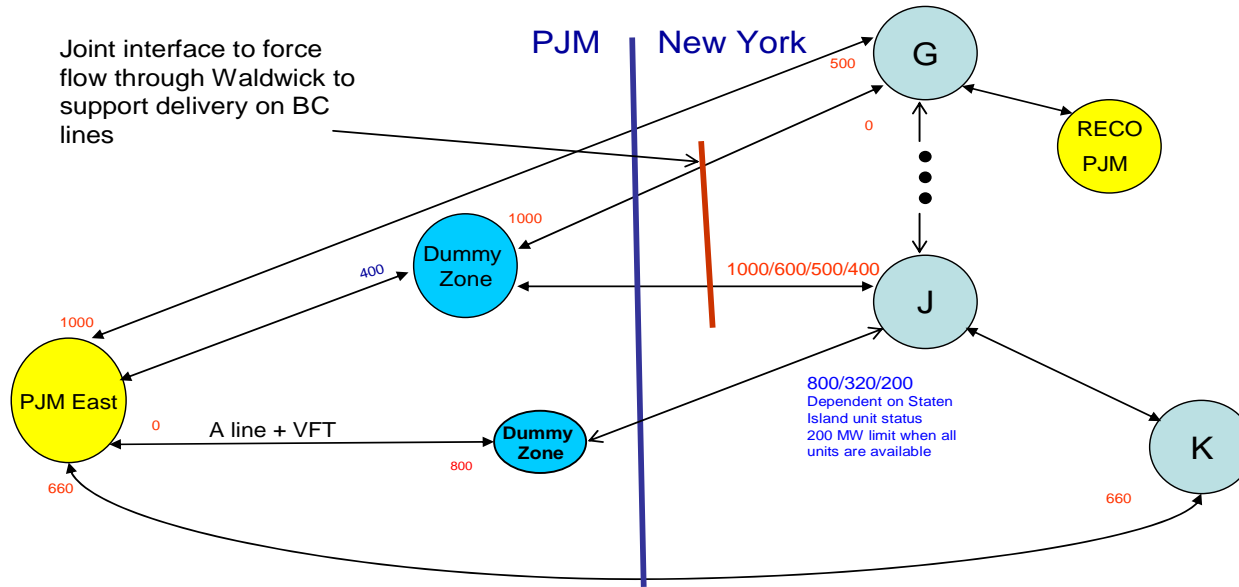




To be updated as part of RNA Study.

### Attachment E-1

## 2009 PJM-NYCA MARS Model - 8/7/2009



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