Energy Impact of New Codes and Standards on 2009 RNA Forecast

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C&S Impact for 2009 RNA

- Potential energy savings are 4,325 GWh, not 8,572 GWh.
- Based on review of EIA Mid-Atlantic forecast and scrutiny of ACEEE results & method.
- NYISO assigns higher realization and confidence factors to the new estimate.

Energy Independence & Security Act of 2007

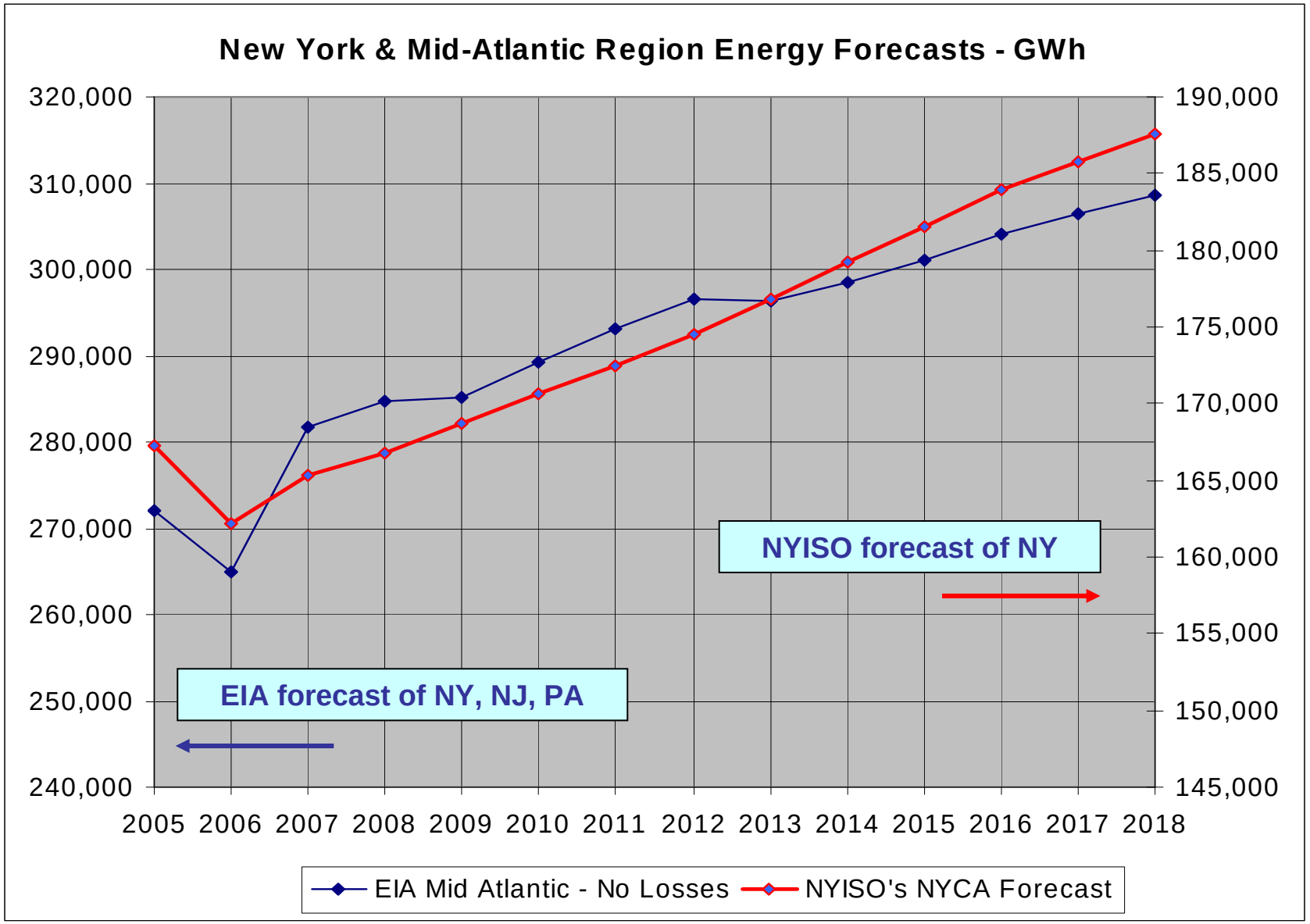
- Mandates new efficiency standards for electric appliances & equipment.
- Passed in December 2007.
- EIA's 2008 Annual Energy Outlook incorporates impacts of EISA2007.
- EIA forecast provides a benchmark to compare the NYISO 2008 long term forecast.

http://energy.senate.gov/public/_files/RL342941.pdf.

http://www.eia.doe.gov/oiaf/aeo/overview.html

C&S Impact for New York

- EIA forecast methodology is based on end-use methods, not econometric methods.
  1. *Compare NYISO & EIA forecasts.*
  2. *Compute one-time impact due to lighting.*
  3. *Account for other C&S impacts based on differences between energy growth in each forecast.*
- Better method than using ACEEE estimate of 7,900 GWh by 2015.
- Higher confidence in results.

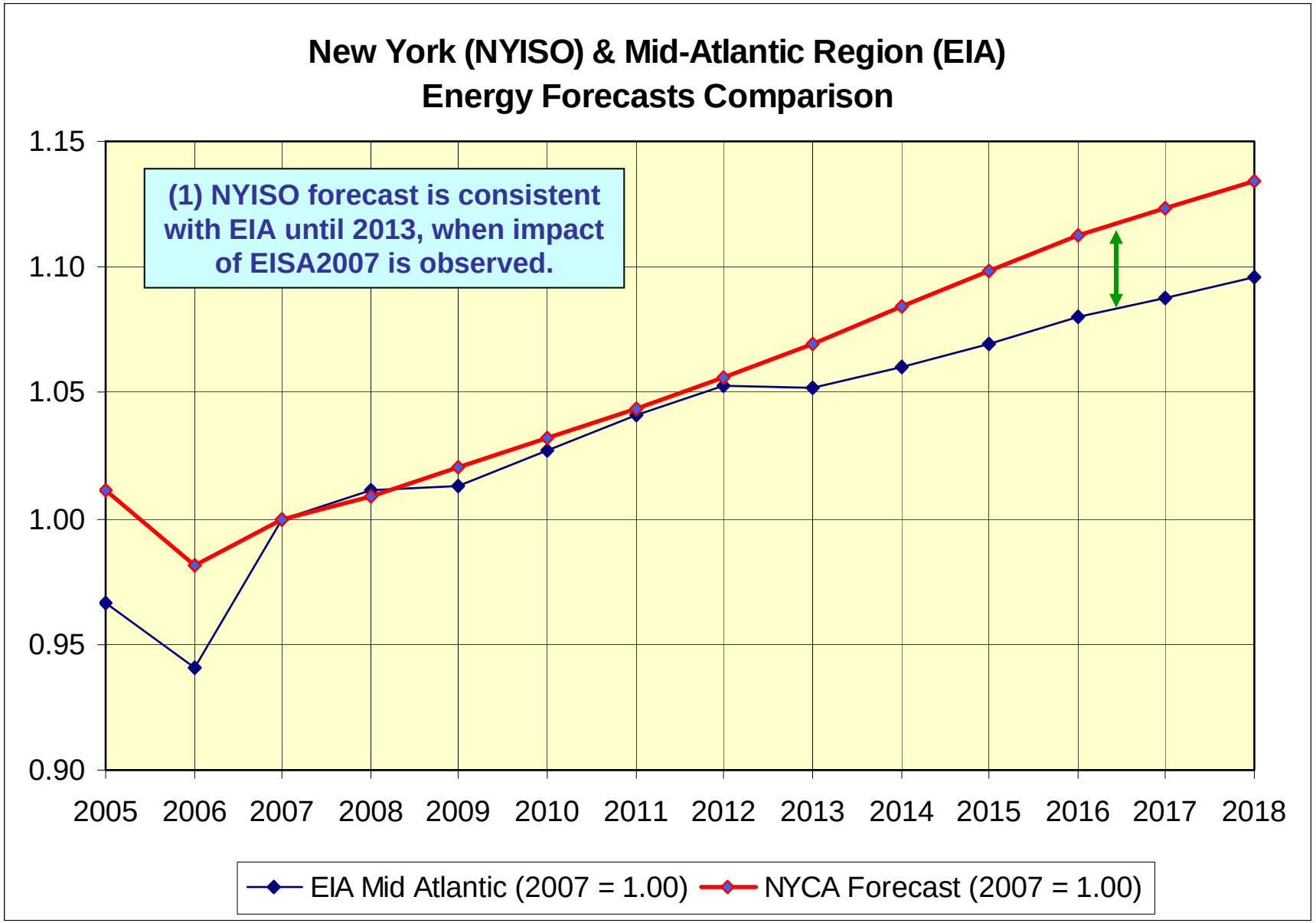

New York & Mid-Atlantic Region Energy Forecasts - GWh
320,000
310,000
300,000
290,000
280,000
270,000
260,000
250,000
240,000
190,000
185,000
180,000
175,000
170,000
165,000
160,000
155,000
150,000
145,000
2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
NYISO forecast of NY
EIA forecast of NY, NJ, PA
EIA Mid Atlantic - No Losses
NYISO's NYCA Forecast

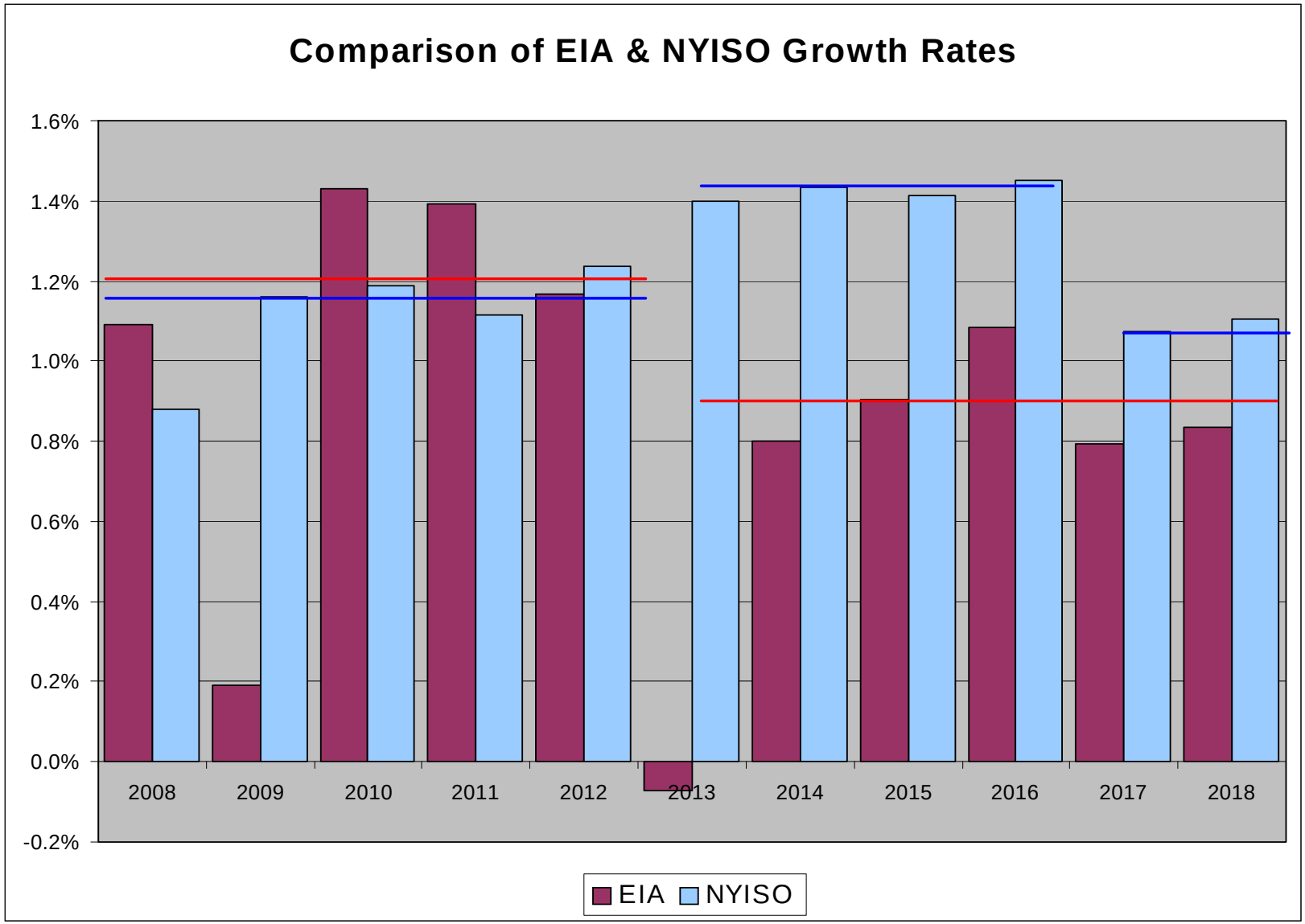
Long Term Annual Energy Trends - EIS & NYISO

Energy units are in GWh

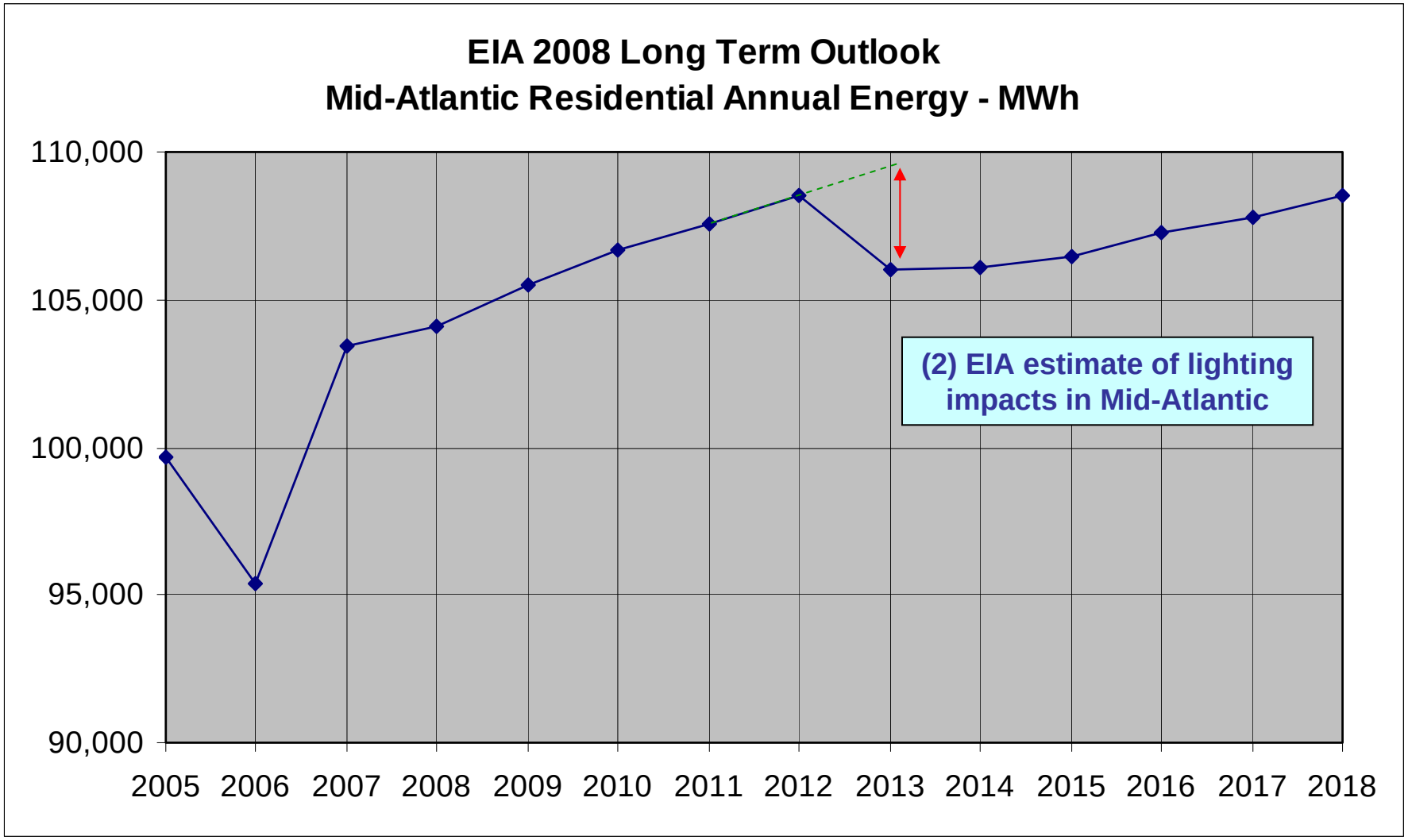
Year	EIA Mid Atlantic - No Losses	NYISO's NYCA Forecast	NYCA, No Losses	NYCA Share of EIA
2005	272,146	167,208	153,831	56.5%
2006	264,964	162,237	149,258	56.3%
2007	281,624	165,309	152,084	54.0%
2008	284,700	166,767	153,425	53.9%
2009	285,234	168,683	155,188	54.4%
2010	289,263	170,649	156,997	54.3%
2011	293,182	172,493	158,694	54.1%
2012	296,467	174,535	160,572	54.2%
2013	296,263	176,850	162,702	54.9%
2014	298,518	179,220	164,883	55.2%
2015	301,067	181,559	167,034	55.5%
2016	304,116	183,960	169,243	55.7%
2017	306,352	185,734	170,875	55.8%
2018	308,702	187,562	172,557	55.9%

EIA forecast excludes T&D losses; NYISO forecast includes them.


New York (NYISO) & Mid-Atlantic Region (EIA)
Energy Forecasts Comparison
(1) NYISO forecast is consistent with EIA until 2013, when impact of EISA2007 is observed.
1.15
1.10
1.05
1.00
0.95
0.90
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
EIA Mid Atlantic (2007 = 1.00)
NYCA Forecast (2007 = 1.00)


Comparison of EIA & NYISO Growth Rates
1.6%
1.4%
1.2%
1.0%
0.8%
0.6%
0.4%
0.2%
0.0%
-0.2%
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
EIA
NYISO

Impact of Lighting Standards in 2012



Estimate of Lighting Impact in New York - MWh

Year	EIA Residential MWh	Delta MWh	2012 Lighting Impact in NY
2005	99,705		
2006	95,377	-4,327	
2007	103,423	8,046	
2008	104,106	683	
2009	105,495	1,389	
2010	106,702	1,207	
2011	107,533	830	
2012	108,519	986	
2013	106,049	-2,470	**-2,066**
2014	106,069	20	
2015	106,426	357	
2016	107,288	862	
2017	107,768	479	
2018	108,533	765	

Accounts for NY share of Mid-Atlantic savings, & adds T&D losses at 8%.

EIA Forecast Implies Each NY Home Changes 6 Lamps

	CFL Per Unit Verification	
a	EIA's Mid-Atlantic CFL Impact, GWh	3456
b	NY Share, at Gen Level	2066
c	Total Lighting Impact, GWh (rounded)	2100
d	2013 Homes, Econ.Com (millions)	7.350
e = c/d	KWh per home	286
f	Savings, Watts Per Lamp	50
g	Burn Hours per year	1000
h= f*g	Kwh Saved per Lamp	50
i = e/h	Lamps per Home	5.7

C&S Impact Between 2013 & 2018

EIA & NYISO Forecasts - Indexed

Year	EIA Mid Atlantic (2007 = 1.00)	NYCA Forecast (2007 = 1.00)
2005	0.966	1.011
2006	0.941	0.981
2007	1.000	1.000
2008	1.011	1.009
2009	1.013	1.020
2010	1.027	1.032
2011	1.041	1.043
2012	1.053	1.056
2013	1.052	1.070
2014	1.060	1.084
2015	1.069	1.098
2016	1.080	1.113
2017	1.088	1.124
2018	1.096	1.135

(3) - Growth Differential of Forecasts

2013 - 2018	EIA	NYISO
Cum Growth	4.4%	6.5%
Differential		2.1%

NYISO 2013 - 2018 C&S	
2013 GWh	176,850
Growth Differential	2.1%
Cumulative C&S - GWh	3649
Annual GWh	**730**

2009 RNA Schedule of C&S GWh

Year	NY C&S GWh	Net After 25% Early EEPS Impl.	2009 RNA Schedule
2008	0	0	0
2009	0	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	775
2013	2,100	1,575	800
2014	730	550	550
2015	730	550	550
2016	730	550	550
2017	730	550	550
2018	730	550	550
Cum GWh	5,750	4,325	4,325

2009 RNA assumes 25% early implementation by other EEPS activities and market movement beginning in 2012.

Why is EIA's Estimate So Much Different from ACEEE?

- EIA employs a comprehensive, multi-sector end-use methodology specific to each region of US.
  - *Accounts for stocks of new & existing equipment*
  - *Stock growth follows economic & demographic trends of region*
- ACEEE employed a bottom-up approach for specific technologies & did not account for regional differences across US.
  - *Simplistic stock accounting based on year 2006.*
  - *Does not factor in economic & demographic trends.*

NEW YORK INDEPENDENT SYSTEM OPERATOR

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and performs comprehensive reliability and resource planning for the state's bulk electricity system.

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www.nyiso.com