

Environmental Update

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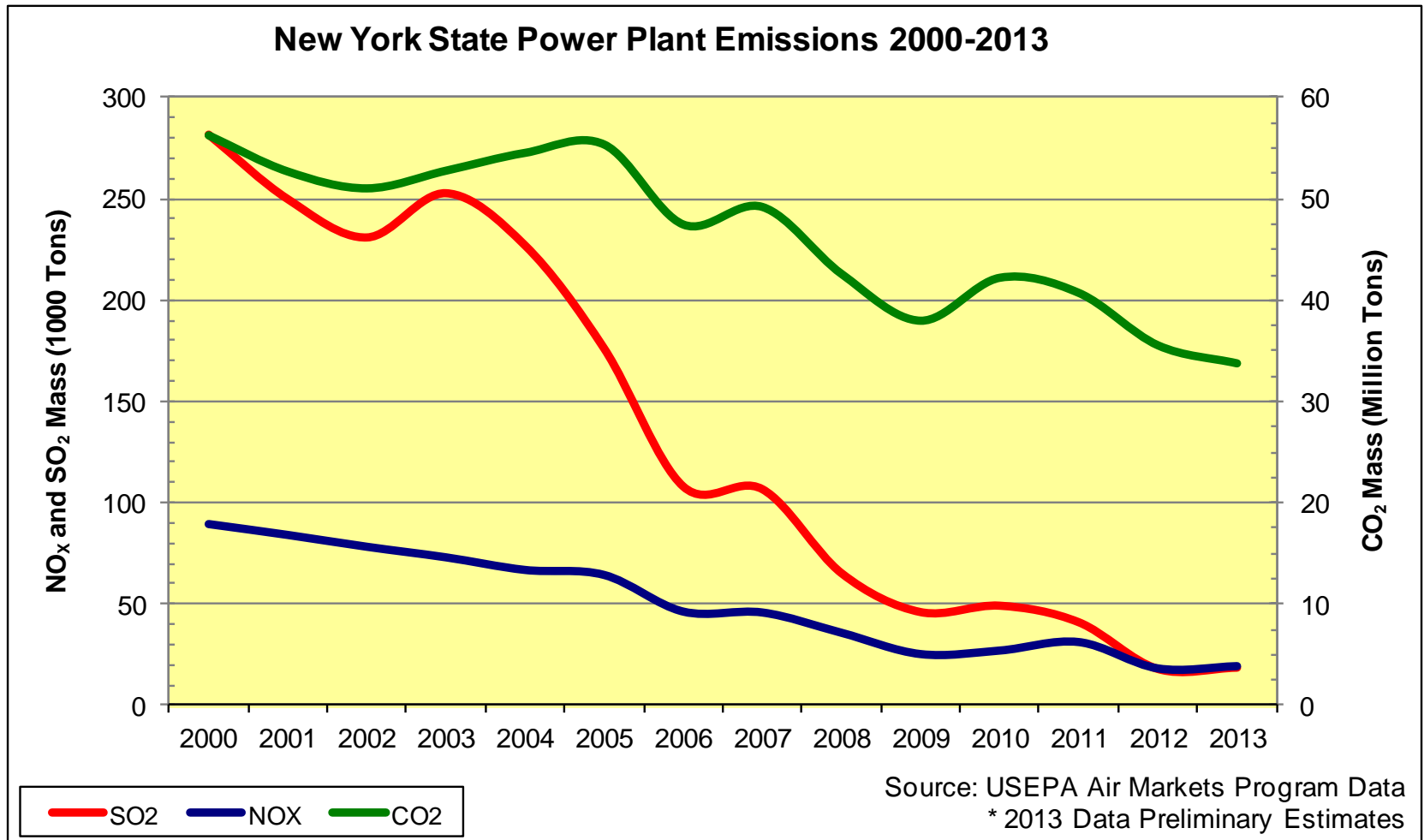
**New York State Reliability Council
Installed Capacity Subcommittee**

*April 2, 2014
KCC*

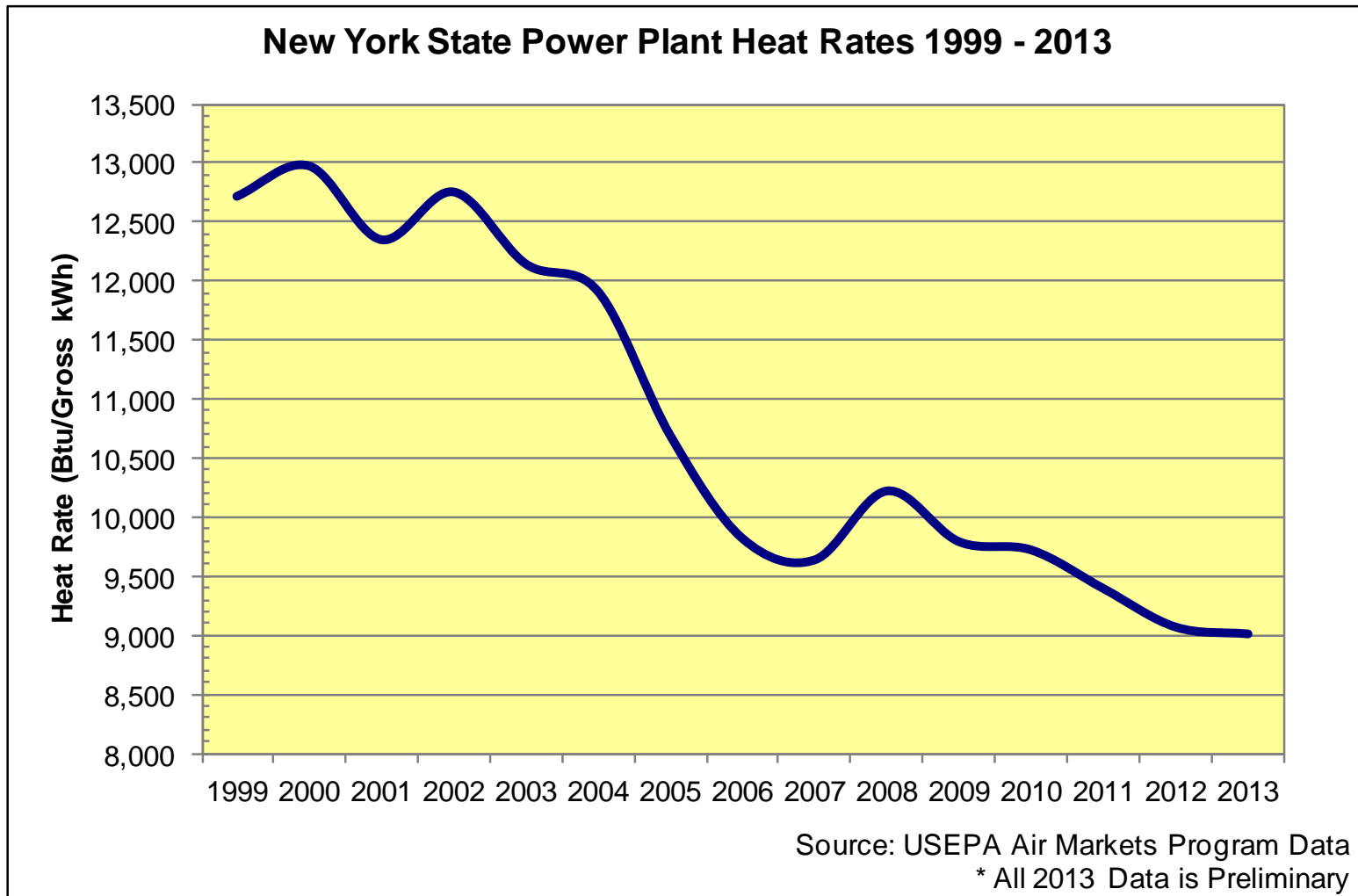
Agenda

- ◆ **Emissions and Heat Rate Performance**
- ◆ **New Environmental Initiatives**

Emission Trends



System Heat Rate Trend



Environmental Initiatives

- ◆ **Scheduled to arrive by 2014,5,6**
 - *BART - Best Available Retrofit Technology* **Jan 2014**
 - *NOx RACT – Reasonably Available Control Technology for NOx*
July 2014
 - *MATS – Mercury and Air Toxics Standards* **Mar 2015/6/7**
 - *CAMR- Clean Air Mercury Rule* **Jan 2015**
 - *CSAPR Cross State Air Pollution Rule* **Judicial Decision 2014**
 - *CAIR- Phase II* **Jan 2015**
 - *BTA - Best Technology Available for water intakes* **@permit renewal**
 - *CO₂ Limits- New and Existing Source Performance Standards*
 - *RGGI – Lower Carbon Caps* **Jan 2014**

USEPA and NYSDEC BART

- ◆ **Best Available Retrofit Technology**
- ◆ **BART affects plants built between 1968 and 1977- 8,200 MW of Capacity**
- ◆ **PTE>250 tpy SO₂, NO_x, PM**
- ◆ **Compliance Date: Jan. 1, 2014**
- ◆ **Compliance Plans include retrofits, cleaner fuels, mothball, and retirements**

NYSDEC NO_x RACT

- ◆ **NYSDEC Nitrogen Oxide Emission Limitations-Reasonably Available Control Technology**
 - *Establishes Presumptive Limits for NO_x emissions*
 - *Provides for System Averaging for emission rates*
 - *Compliance Date: July 1, 2014*

NOx RACT Limits

Existing NOx RACT Limits #/mmBTU				
Boiler Type				
Fuel Type	Tangential	Wall	Cyclone	Stoker
Gas Only	0.20	0.20		
Gas/Oil	0.25	0.25	0.43	
Coal Wet	1.00	1.00	0.60	
Coal Dry	0.42	0.45		0.30

New NOx RACT Limits #/mmBTU				
Boiler Type				
Fuel Type	Tangential	Wall	Cyclone	Fluidized Bed
Gas Only	0.08	0.08		
Gas/Oil	0.15	0.15	0.20	
Coal Wet	0.12	0.12	0.20	
Coal Dry	0.12	0.12		0.08

Mercury and Air Toxics Standards (MATS)

- ◆ **Establishes limits for the emission of Mercury, Acid Gases, and Non-Mercury Toxic Metals from Coal and Oil Fired Electric Generating Units**
- ◆ **NYSDEC Clean Air Mercury Rule is more restrictive**
- ◆ **Effective Q1 2015 + 1(for most) + 1 for Reliability Critical Units**

Cross State Air Pollution Rule

◆ USEPA Cross State Air Pollution Rule (CSAPR)

- *Limits SO₂ and NO_x emissions in 28 Eastern States*
 - DE and New England are exempt
 - Coal and oil fired generators
- *Provides for limited interstate trading of emission allowances*
 - Up to 18% / 21% of state budget is tradable
- *Vacated by the Court*
 - Supreme Court decision expected mid 2014
- *CAIR will remain in place until a new rule is developed*
- *CAIR Phase II 2015 reductions ~ 50%*

USEPA and NYSDEC BTA

- ◆ **Clean Water Act sections 316 a & b**
- ◆ **Applies to plants that use public waters for cooling systems and is reviewed when SPDES permits are renewed**
 - *Study current levels of fish entrainment and impingement*
 - *Propose “Best Technology Available”*
 - *This may mean conversion to closed cycle cooling systems*
 - *The requirement for conversions may lead to unplanned retirements*

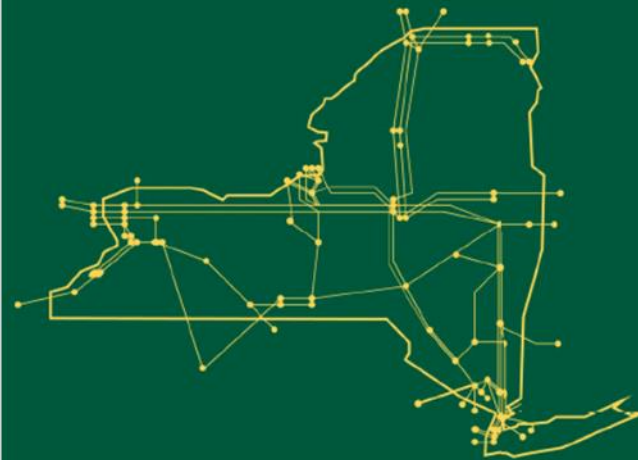
BTA Status

NYSDEC BTA Determinations March 2014	
Plant	Status
Arthur Kill	BTA Decision made, monitoring
Astoria	BTA Decision made, installing equipment
Barrett	Repowering Study underway
Bowline	BTA Decision made, 15% Cap. Factor
Brooklyn Navy Yard	BTA Decision made, installing upgrades
Cayuga	BTA Decision made, install screens, UPP ok, Sierra Club challenge
Dunkirk	BTA Decision made, monitoring
East River	BTA installed, monitoring
Fitzpatrick	BTA Determination possible in 2014
Fort Drum	BTA installed, monitoring
Ginna	BTA Determination possible in 2015
Huntley	BTA Decision 15% Cap. Factor and vs pumps, NRG and Sierra Club have requested hearings
Indian Point	Hearings, BTA Decision 2016 at the earliest
Nine Mile Pt 1	BTA Determination possible in 2015
Northport	BTA Determination possible in 2015
Oswego	BTA Determination possible in 2015/6
Port Jefferson	BTA installed, monitoring
Ravenswood	BTA installed, monitoring
Roseton	In hearings
Somerset	BTA Determination possible in 2014

New CO2 Limits

- ◆ **RGGI Lowers the cap 45%**
- ◆ **Draft New Source Performance Standards released**
- ◆ **Presidential Memorandum called for USEPA to invoke Section 111(d) of the Clean Air Act to control CO2 emissions from existing power plants**

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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