

Commissioner Briefing & Proposed Staff Recommendation: EPA's Recently-Proposed Cross State Air Pollution Rule ("CSAPR")

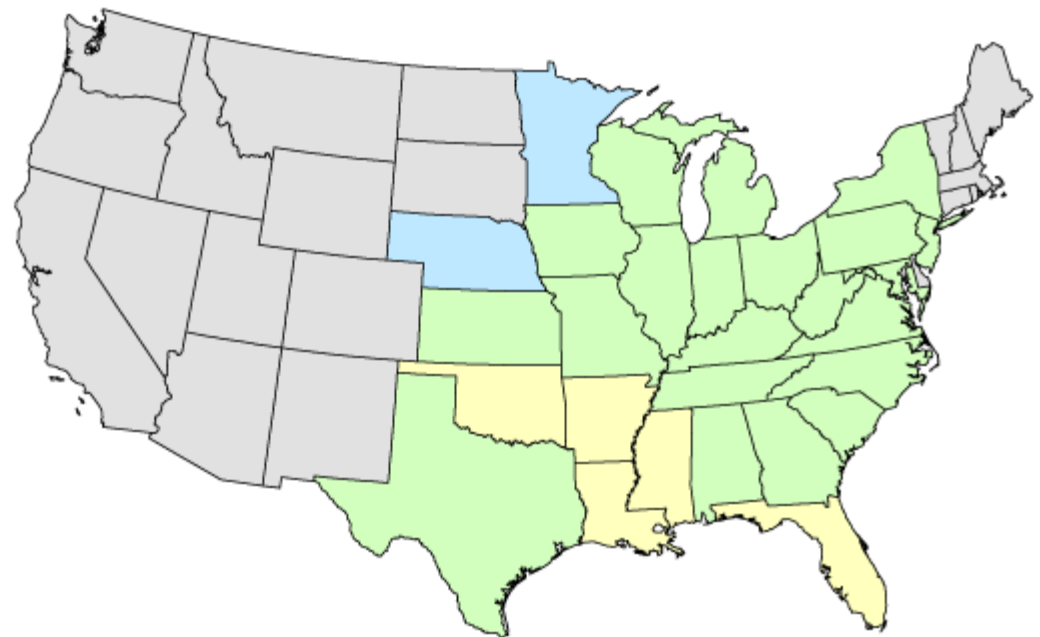
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CSAPR at a Glance

- The Cross-State Air Pollution Rule (“CSAPR”) was finalized July 6, 2011.
- Requires 27 states to significantly improve air quality by reducing power plant emissions that contribute to ozone and/or fine particle pollution in other states.
- This rule replaces EPA's 2005 Clean Air Interstate Rule (CAIR). Purpose is to continue the reduction in acid rain emissions started under CAAA and reduce NOx emissions that can lead to ozone-related air quality problems. Both are/were designed to increase air quality and reduce hazards to human health.
- Emission reductions will take effect starting January 1, 2012 for SO₂ and annual NO_x reductions, and May 1, 2012 for ozone season NO_x reductions.
- By 2014, combined with other final state and EPA actions, the CSAPR will reduce power plant SO₂ emissions by 73 percent and NO_x emissions by 54 percent from 2005 levels in the CSAPR region.
- EPA estimates this rule will cost \$800 million annually, in addition to the \$1.6 billion per year in capital investments already under way as a result of CAIR



■ States controlled for both fine particles (annual SO₂ and NO_x) and ozone (ozone season NO_x) (21 States)
■ States controlled for fine particles only (annual SO₂ and NO_x) (2 States)
■ States controlled for ozone only (ozone season NO_x) (5 States)
■ States not covered by the Cross-State Air Pollution Rule

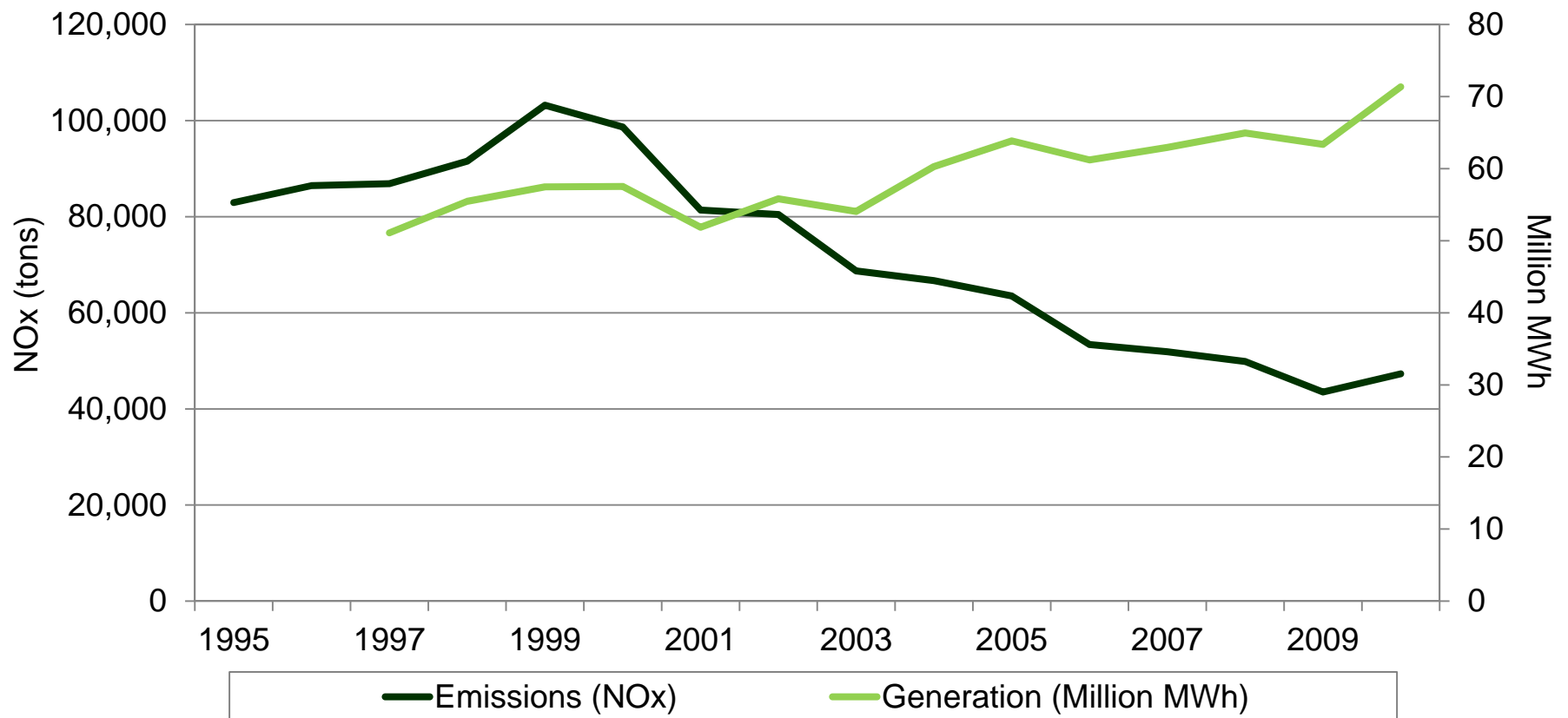
CSAPR: Proposed State Reductions

	Emissions in 2010 (tons NOx)	Emission Budget 2012-2013 (tons NOx)	Emissions Over or (Under) Budget (tons NOx)	Percent Change (%)
Alabama	27,849	31,746	3,897	14%
Arkansas	17,921	15,037	(2,884)	-16%
Florida	33,334	27,825	(5,509)	-17%
Georgia	26,790	27,944	1,154	4%
Illinois	21,371	21,208	(163)	-1%
Indiana	49,159	46,876	(2,283)	-5%
Kentucky	39,065	36,167	(2,898)	-7%
Louisiana	23,172	13,432	(9,740)	-42%
Maryland	9,428	7,179	(2,249)	-24%
Mississippi	16,089	10,160	(5,929)	-37%
New Jersey	5,192	3,382	(1,810)	-35%
New York	12,887	8,331	(4,556)	-35%
North Carolina	24,661	22,168	(2,493)	-10%
Ohio	47,582	40,063	(7,519)	-16%
Pennsylvania	58,211	52,201	(6,010)	-10%
South Carolina	13,769	13,909	140	1%
Tennessee	14,667	14,908	241	2%
Texas	68,446	63,043	(5,403)	-8%
Virginia	18,311	14,452	(3,859)	-21%
West Virginia	24,206	25,283	1,077	4%
Total	552,110	495,314	(56,796)	-10%

Source: 76FR 48262-48263; and US EPA , Final CSAPR Unit Level Allocations under the FIP.

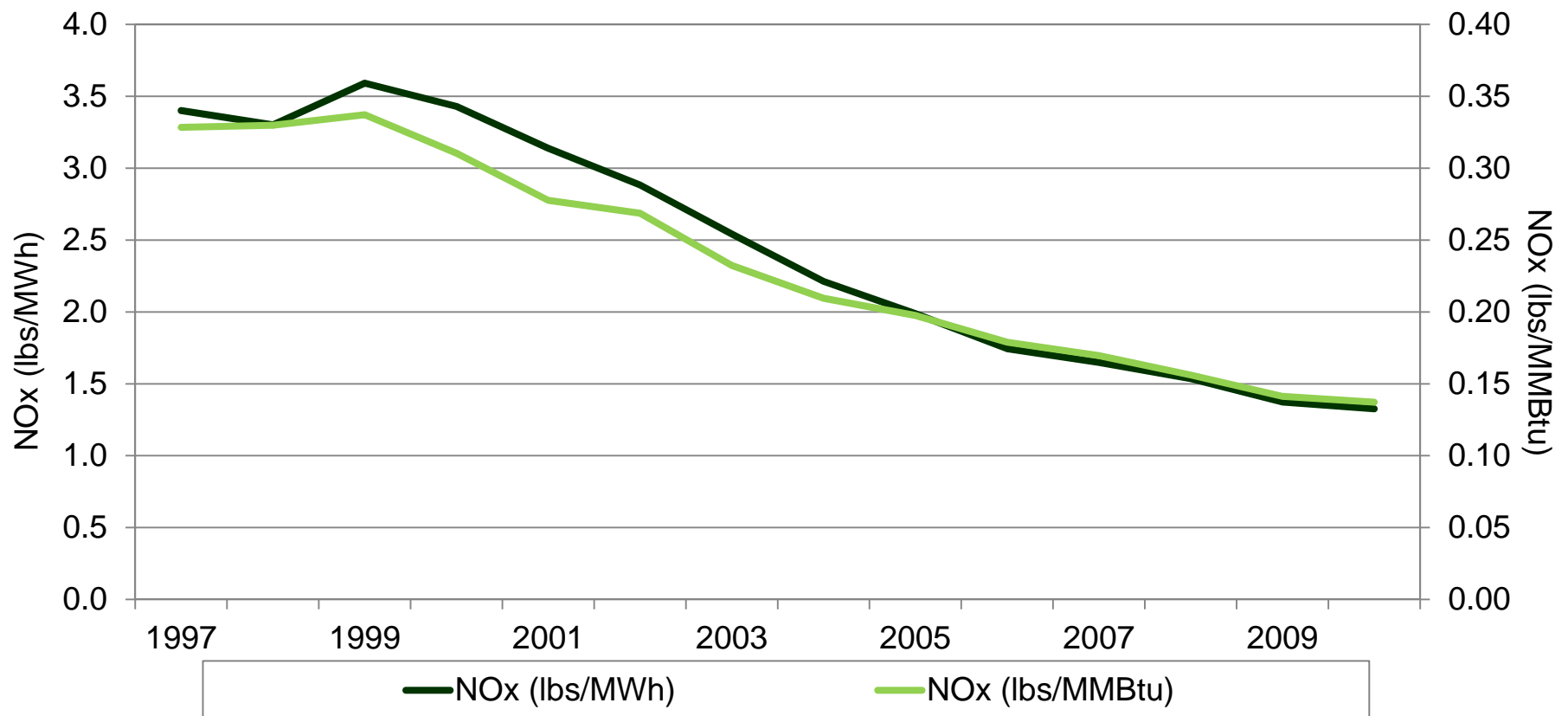
Historic Generation & Emissions

Louisiana generation trends are up, yet overall NOx emissions from fossil units are down.



Emissions per Output (MWh) and Heat Input (MMBtu) Basis

Increased generation and decreased emissions translate into higher efficiencies on an output and heat input basis.



Estimated Louisiana Allowances & Deficits

	3-Year Average NOx	CSAPR			
		Allocation	Percent Difference	Deficit with CSAPR	
				2012	2014
CLECO	2,760.9	1,534.2	-44.4%	(1,226.7)	(1,226.7)
ELL	6,516.0	2,609.0	-60.0%	(3,907.0)	(3,907.0)
EGSL	2,925.3	1,583.0	-45.9%	(1,342.3)	(1,342.3)
ENO	896.5	592.0	-34.0%	(304.5)	(304.5)
SWEPCO	1,150.0	630.0	-45.2%	(520.0)	(520.0)
Muni	1,637.5	806.8	-50.7%	(830.7)	(830.7)
Big Cajun 2	5,001.7	2,842.0	-43.2%	(2,159.7)	(2,159.7)
IPP	281.6	415.0	47.4%	133.4	133.4
Cogen	1,864.5	2,018.0	8.2%	153.5	153.5
Total	23,034.0	13,030.0	-43.4%	(10,004.0)	(10,004.0)

Louisiana-Specific Problems

- EPA's emission reductions and allowance modeling is flawed and makes a number of unrealistic assumptions about how specific regional power markets work.
- EPA's model leads to an unattainable standard for Louisiana since physical compliance cannot likely be reached. It takes approximately three years to design, engineer, permit, and install an SCR or scrubber. We have to comply in May, 2012 (8 months)
- Louisiana will be about 10,000 tons short in allowances relative to historic generation levels. Over 9,000 MWs of capacity received zero allowances.
- EPA modeling, and resulting allocations, does not recognize the reliability must-run nature of many units.
- Host of critical modeling errors that include failure to recognize intra-state transmission constraints, operational units, unit operating efficiencies, and likely dispatch.

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Generation Availability & Reliability Impacts

Coal-Fired Capacity Share by Age Category

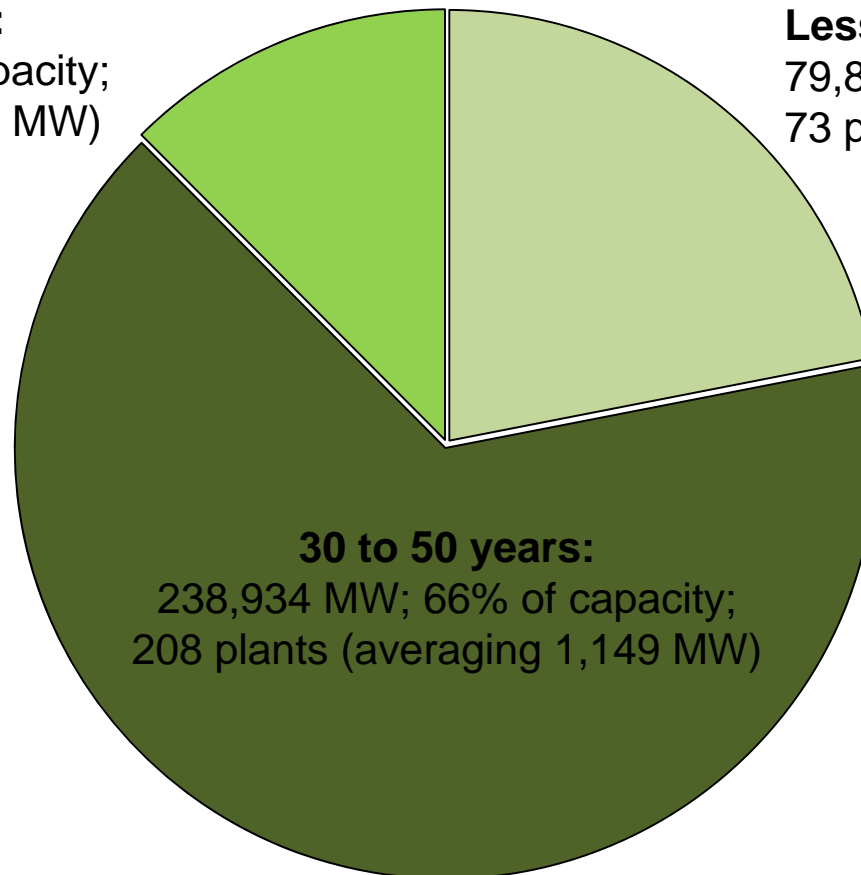
There is a considerable amount of legacy coal capacity (45 GWs) that is relatively old, and in some instances, has few to little controls to meet anticipated standards.

Greater than 50 years:

45,382 MW; 12% of capacity;
72 units (averaging 630 MW)

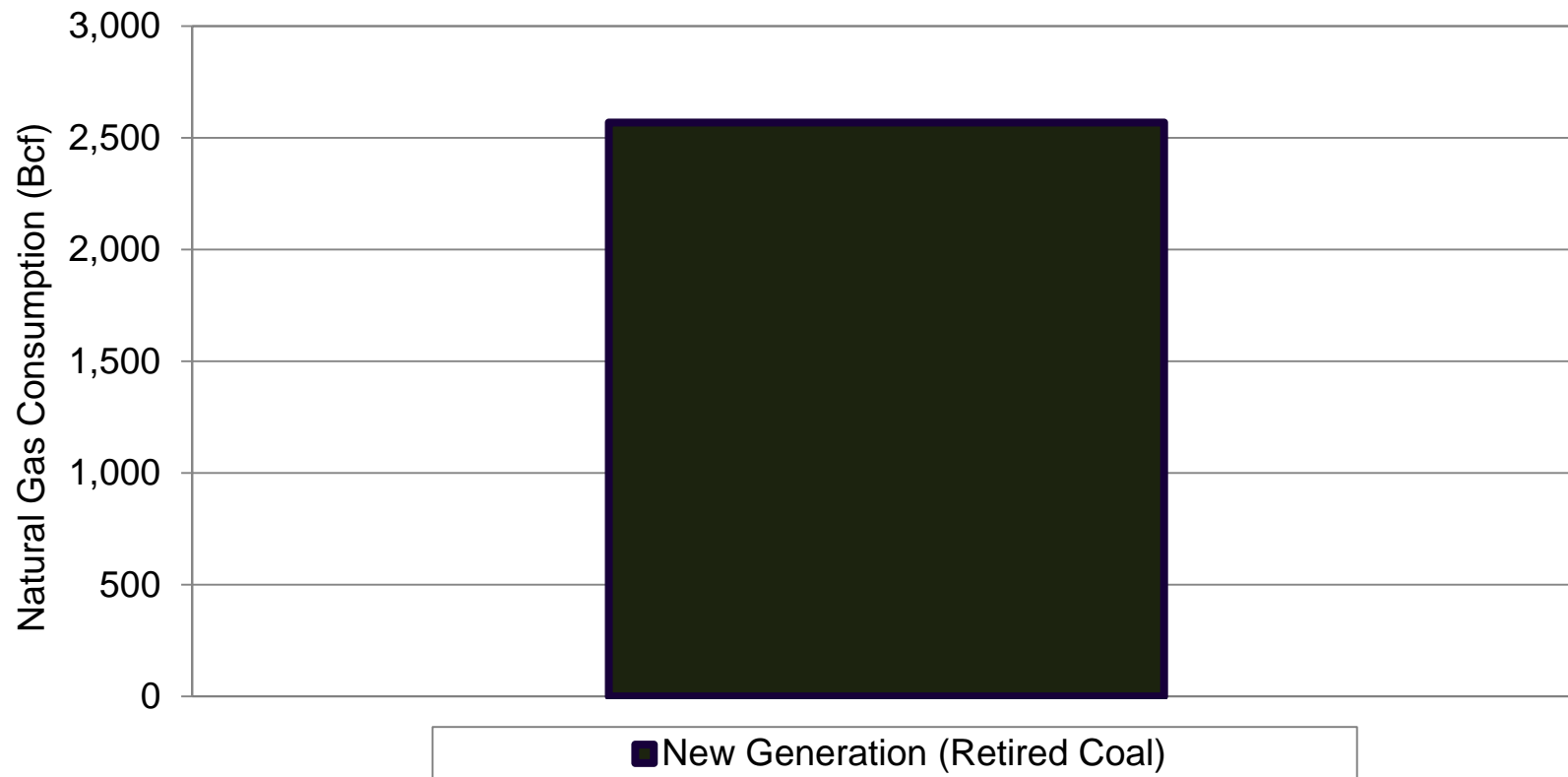
Less than 30 years:

79,876 MW; 22% of capacity;
73 plants (averaging 1,094 MW)



Potential Natural Gas Consumption – New Generation Use (Retired Coal)

The retirement of 45 gigawatts of capacity would likely still have an impact on overall natural gas usage.



Note: Assumes 160 Bcf of NGV natural gas use. Also assumes retirement of 45 GW of coal-fired capacity, replaced with new natural gas generation with an 85 percent capacity factor and a 7,600 Btu/kWh heat rate.

Summary of Retirement Studies Related to EPA Rules

Study	Retired Capacity	Regulation Requirements	Estimated GW of Retired Coal							
			10	20	30	40	50	60	70	80
NERC (October 2010)	47 to 76 GW by 2018 (total fossil fuel capacity, including oil and gas)	Levelized costs (@2008 CF) after retrofitting each unit for the environmental regulations compared to the cost of a new gas-fired unit.								
		Scenario 1 - Transport Rule	[Bar chart showing ~10 GW]							
		Scenario 2 - Transport Rule, MACT Scenario 3 - Transport Rule, MACT, 316(b) Cooling Water, Coal Ash	[Bar chart showing ~75 GW]							
ICF/IEE (May 2010)	25 to 60 GW by 2015	Cost of retrofitting coal plant compared to cost of new gas CC								
		Scenario 1 - Transport Rule, MACT Scenario 2 - Transport Rule, MACT, CWA 316(b)	[Bar chart showing ~50 GW]							
Brattle Group (December 2010)	50 to 65 GW by 2020	Regulated Units - 15-year present value of costs > replacement power from a CC or CT. Merchant unit - 15-year present value of cost > revenues from energy and capacity markets.								
		Transport Rule, MACT, 316(b) Cooling Water, Coal Ash	[Bar chart showing ~65 GW]							
Credit Suisse (September 2010)	60 GW	Size and existing controls Transport Rule, MACT	[Bar chart showing ~60 GW]							
Charles River Associates (December 2010)	39 GW by 2015	In-house model (NEEMS) optimizing costs of existing capacity and costs of potential new capacity.								
		Transport Rule, MACT	[Bar chart showing ~40 GW]							
MJ Bradley (August 2010)	30 to 40 GW	Switch to lower sulfur coal, install emission controls, or retire Transport Rule, MACT	[Bar chart showing ~40 GW]							
Bernstein Research (October 2010)	51 GW	FGS + emissions on all coal fired units by 2015								
		Transport Rule, MACT	[Bar chart showing ~50 GW]							

Source: Synapse Energy Economics, Inc., "Public Policy Impacts on Transmission Planning, Prepared for Earthjustice", December 10, 2010; and "Miller, P. A Primer on Pending Environmental Regulations and their Potential Impacts on Electric System Reliability. Working Draft, JD Northeast States for Coordinated Air Use Management. January 24, 2011.

Louisiana Reliability Issues

- EPA clearly did not seek, nor attempt to understand the reliability implications of its proposed regulation.
- Concerns imported generation may not be available (used to meet its own native requirements), that the generation will be expensive, or will be constrained by transmission.
- Most regional NERC reliability councils have expressed serious concerns about the proposed rule and its reliability implications.
- If credits and/or generation are not available, utilities will have to either (a) shut down units or (b) pay a penalty of \$37,500 per ton per day. State emits, on average, about 150 tons per day – could be a \$450 million penalty for 80 days.

***NOTE: Louisiana will likely run out of emission credits around the 4th of July weekend if EPA's proposed regulations go into place.
The ozone season ends the last week of September.***

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Potential Rate Impacts

Potential Capital Investments

Significant capital costs will be associated with these regulations. Wide variation in capital and operating cost estimates.

Equipment/Cost	EPA (Est Cost \$ 2010)	EIA	Equipment/Cost	EPA (Est Cost \$ 2010)	EIA
Wet Scrubber			ACI		
Capital (\$/kW)	\$ 538.00	\$ 485.00	Capital (\$/kW)	\$ 8.00	\$ 6.00
Fixed O&M (\$/kW-yr)	\$ 8.35	\$ 24.99	Fixed O&M (\$/kW-yr)	\$ 0.03	\$ 1.17
Variable O&M (\$/MWh)	\$ 2.11	\$ 0.44	Variable O&M (\$/MWh)	\$ 0.60	\$ -
Capacity Penalty	-0.0184	-0.05	Capacity Penalty	-0.60%	0.00%
Heat Rate Penalty	0.0187	0.0526	Heat Rate Penalty	0.60%	0.00%
Dry Scrubber			Fabric Filter		
Capital (\$/kW)	\$ 460.00		Capital (\$/kW)	\$ 170.00	\$ 78.00
Fixed O&M (\$/kW-yr)	\$ 6.76		Fixed O&M (\$/kW-yr)	\$ 0.73	\$ 5.97
Variable O&M (\$/MWh)			Variable O&M (\$/MWh)	\$ 0.16	\$ -
Capacity Penalty	-1.45%		Capacity Penalty	-0.60%	0.00%
Heat Rate Penalty	1.47%		Heat Rate Penalty	0.60%	0.00%
SCR			DSI		
Capital (\$/kW)	\$ 201.00	\$ 165.00	Capital (\$/kW)	\$ 43.00	
Fixed O&M (\$/kW-yr)	\$ 0.73	\$ 1.66	Fixed O&M (\$/kW-yr)	\$ 0.61	
Variable O&M (\$/MWh)	\$ 1.38	\$ 0.34	Variable O&M (\$/MWh)	\$ 7.70	
Capacity Penalty	-0.58%	0.00%	Capacity Penalty	-0.79%	
Heat Rate Penalty	0.59%	0.00%	Heat Rate Penalty	0.79%	

NERA CATR-MACT Impact Study

The older “CATR” proposal was anticipated to have around a 12 percent over several years.

Some states, under “CATR,” were anticipated to see increases close to 24 percent, many well over 15 percent.

All of these estimated rate increases will be larger under CSAPR.

State/Region	Percent Change - Electricity Rates		
	2016	2020	2025
New England	7.5%	7.7%	5.4%
New York City	5.5%	5.0%	7.6%
NY Long Island	6.5%	4.8%	6.6%
NY Update	8.0%	6.4%	8.1%
Mid-Atlantic	17.1%	9.9%	7.8%
VA & Carolinas	12.7%	9.9%	8.2%
Southeast	14.5%	9.4%	9.8%
Florida	8.8%	8.9%	8.5%
Lower MI	20.5%	17.7%	13.4%
OH, IN & WV	12.9%	12.1%	11.9%
KY & TN	23.5%	17.8%	13.3%
WI and Upper MI	21.7%	17.3%	12.6%
Upper Midwest	17.6%	14.1%	10.2%
South IL & East MO	23.1%	18.8%	16.3%
KS & West MO	12.8%	12.0%	14.6%
AR, LA & West MS	9.0%	8.0%	7.5%
Oklahoma	15.8%	12.8%	10.9%
Texas	12.1%	9.4%	9.5%
CO & East WY	6.1%	7.3%	8.8%
Northwest	2.0%	4.0%	7.9%
AZ & NM	6.1%	5.2%	3.6%
California	1.8%	1.9%	0.8%
US Average	11.5%	9.5%	8.5%

Louisiana-Specific Rate Impact Concerns

- Rate impacts that have been estimated to date for CATR are likely underestimated, potentially by as much as four percent or more.
- Studies to date do not account for the operating inefficiencies that may result from installed controls and “re-optimization/re-prioritization” of dispatch that could result in more inefficient fuel use.
- Studies to date do not take into account the “rush premium” likely to be assessed on mitigation equipment nor engineering and permitting costs.
- Studies likely do not take appropriate “allowance scarcity” into context.
- Studies do not consider the increased state regulatory burden associated with managing the approval and costs of compliance.

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Regulatory and Ratemaking Impacts

Recent NARUC Resolution

- **NARUC recently passed a resolution expressing concerns about the EPA rulemakings and noted, among other points:**
 - **Such regulations under consideration by EPA could pose significant challenges for the electric power sector and the state regulatory commissions with respect to economic burden, the feasibility of implementation by the contemplated deadlines and maintenance of system reliability.**
 - **NARUC recognizes that flexibility with the implementation of EPA regulations can lessen generation cost increases because of improved planning, selection of correct design for the resolution of multiple requirements, greater use of energy efficiency and demand side resources and orderly decision-making.**
 - **Some generators that will be impacted by the new EPA rulemakings are located in constrained areas or supply-constrained areas and will need time to allow for transmission or new generation studies to resolve reliability issues.**

Specific NARUC Recommendations

NARUC's specific resolutions included, but were not limited to, recommendations to EPA that future regulations:

- **allow to coordinate the closure and/or retrofitting of existing generators in an orderly and cost effective manner that will maximize efficiency and environmental compliance.**
- **Allow regulatory options of regulatory-must-run units that “pre-commit” to future retirement or repowering.**
- **Establishing “phase-in” regulations.**
- **Establish interim progress standards to ensure intermediate progress is being made.**
- **Greater and more active regulatory stakeholder interaction in examining opportunities for meeting these goals and standards.**

Louisiana Regulatory Challenges

Regulatory challenges created by the new EPA rules include:

- **Timing**: the ability to meet these requirements will be difficult if even possible. Equipment procurement, engineering, permitting and installation can be multi-year processes.
- **Flexibility**: there are limited alternatives, such as allowance trading or temporary attainment waivers for reliability, that utilities can utilize.
- **Cost**: limitations on timing and flexibility will increase costs dramatically in an area that has already experienced increased costs.
- **Regulatory Planning Complications**: will have implications for resource additions that are not limited to solid-fuel generation alone.
- **Regulatory Review Complications**: EPA regulations will make environmental cost recovery review more difficult in the near-term and longer run.
- **Risk-shifting**: EPA regulations will place utility regulators, utilities, and ratepayers in opposing positions on many cost recovery, rate of return, and risk allocation issues.

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Staff Actions & Recommendations

Staff Actions to Date

- **Ongoing review of the rule, input data and modeling assumptions and output.**
- **Regular meetings and communications with LDEQ.**
- **Regular conference calls with regional EPA staff (facilitated by LDEQ).**
- **Sharing of files and information with EPA.**
- **Initial information requests submitted to utilities and other parties. Responses provided in addition to ongoing supplements as information becomes available.**
- **Well attended technical conference (August 26, 2011).**
- **Open record for continued information collection.**

Staff Recommendations

- 1) That the Commission authorize Staff, with the assistance of outside counsel, to file a petition for reconsideration, along with a request for stay, before the EPA;**
- 2) That the Commission authorize Staff, with the assistance of outside counsel and in conjunction with other state agencies, to file a petition for judicial review and request for stay in the Court of Appeals for the DC Circuit; and**
- 3) That the Commission submit a letter to the EPA notifying the EPA of its concerns with regard to the rule and its intent to file a request for reconsideration with the agency (a draft of which was provided to you).**

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Questions, Comments and Discussion

