

EPA Planning and implementation Update

Western Regional Air Partnership

November 11, 2009

Ongoing NAAQS Reviews: Current Schedule

MILESTONE	POLLUTANT						
	Lead	NO ₂ Primary	SO ₂ Primary	Ozone	NO ₂ /SO ₂ Secondary	CO	PM
NPR	New schedule being developed	<u>Jun 26, 2009</u>	<u>Nov 16, 2009</u>	Dec 21, 2009	<u>Feb 12, 2010</u>	<u>Oct 28, 2010</u>	July 2010
NFR	<u>Oct 15, 2008</u>	<u>Jan 22, 2010</u>	<u>Jun 2, 2010</u>	Aug 31, 2010	<u>Oct 19, 2010</u>	<u>May 13, 2011</u>	Oct 2011

NOTE:

Underlined dates indicate court-ordered or settlement agreement deadlines.

Currently negotiating 17 month extension of NO₂/SO₂ secondary schedule.

Anticipated NAAQS Implementation Milestones

Pollutant	NAAQS Promulgation Date	Designations Effective	110(a) SIPs due (3 yrs after NAAQS promulgation)	Attainment Demonstration Due	Attainment Date
PM _{2.5} (2006)	Sept 2006	Nov 2009	Sept 2009	Nov 2012	Nov 2014/2019
Pb	Oct 2008	Nov 2010/2011 (extra time for new monitors)	Oct 2011	June 2012/2013	Nov 2015/2016
NO ₂ (primary)	Jan 2010	Feb 2012	Jan 2013	Aug 2013	Feb 2017
SO ₂ (primary)	June 2010	July 2012	June 2013	Jan 2014	July 2017
Ozone	Aug 2010	Aug 2011	Aug 2013	Dec 2013	Aug 2017 (Moderate)
CO	May 2011	June 2013	May 2014	Dec 2014	May 2018
PM _{2.5} (2011)	Oct 2011	Nov 2013	Oct 2014	Nov 2016	Nov 2018/2023

Key Milestones for Implementation

- PM2.5 (24-hour, 2006 standard)
 - Attainment Demonstrations due November 2012
- Regional Haze
 - FIPs due January 2011
 - Midcourse Progress Reviews – December 2012
 - Full Reasonable Progress SIP #2 - December 2017

Key Milestones for Implementation

- **NO₂ Primary (2010)**
 - Attainment Demonstrations – August 2013
- **Ozone NAAQS (2010)**
 - Attainment Demonstrations – December 2013
- **SO₂ Primary (2010)**
 - Attainment Demonstrations – January 2014

Implementation Issues

- Planning Guidance/Implementation Rules
- Exceptional Events (NO_x, SO₂)
 - WESTAR Letter
- Transport Region options
 - Clean Air Interstate Rule decision 2008
- Federal Rules
 - Consumer products
 - Control Technique Guidelines
 - Architectural Coatings

Multipollutant Planning

- Benefits
 - Reduced costs and increased benefits
 - More effective use of State and Federal resources
 - Clear signals to industry on multiple pollutants
- Challenges
 - Not addressed in CAA
 - Timing and form of the individual NAAQS
 - Litigation

Carper Bill – EPA Analysis

July 2009

Analytical Scenarios

The analysis focuses on six different power sector cap & trade scenarios for SO₂ and NO_x.

Control Scenario 1: Annual Emissions Caps

	2012 - 2014	2015 - 2019	2020 and beyond
SO ₂	3.5 million tons	2.0 million tons	2.0 million tons
Eastern NO _x	1.39 million tons	1.3 million tons	1.3 million tons
Western NO _x	400,000 tons	320,000 tons	320,000 tons
Total NO _x	1.79 million tons	1.62 million tons	1.62 million tons

Control Scenario 2: SO₂ cap same as #1 in 2012, then 1.5 million tons in 2015; NO_x caps same as #1

Control Scenario 3: SO₂ same as #2; NO_x caps same as #1 in 2012, then 1 million ton NO_x cap for Eastern (CAIR) and 0.25 million ton NO_x cap for Western (non-CAIR) region in 2015

Control Scenario 4: SO₂ cap same as #1 in 2012, then 1 million ton cap in 2015; NO_x caps same as #1

Control Scenario 5: SO₂ caps same as #2; national NO_x caps equal to sum of regional NO_x caps in #1; no regional NO_x caps

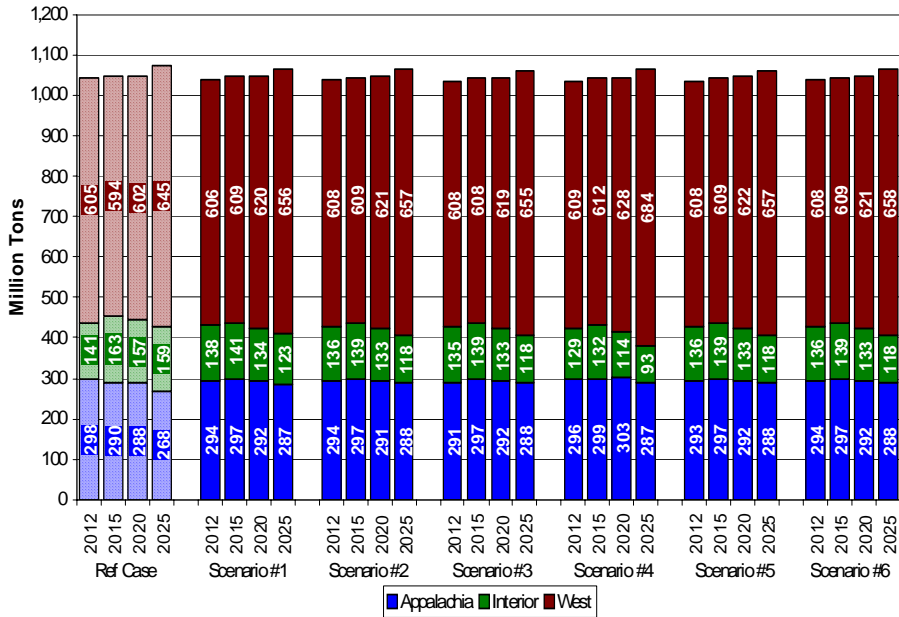
Control Scenario 6: SO₂ caps same as #2; existing NO_x requirements until 2015 (no new 2012 caps), then same as #2 for 2015 and beyond

Eastern region for this analysis includes ME, VT and NH in addition to the original 28 CAIR states and DC.

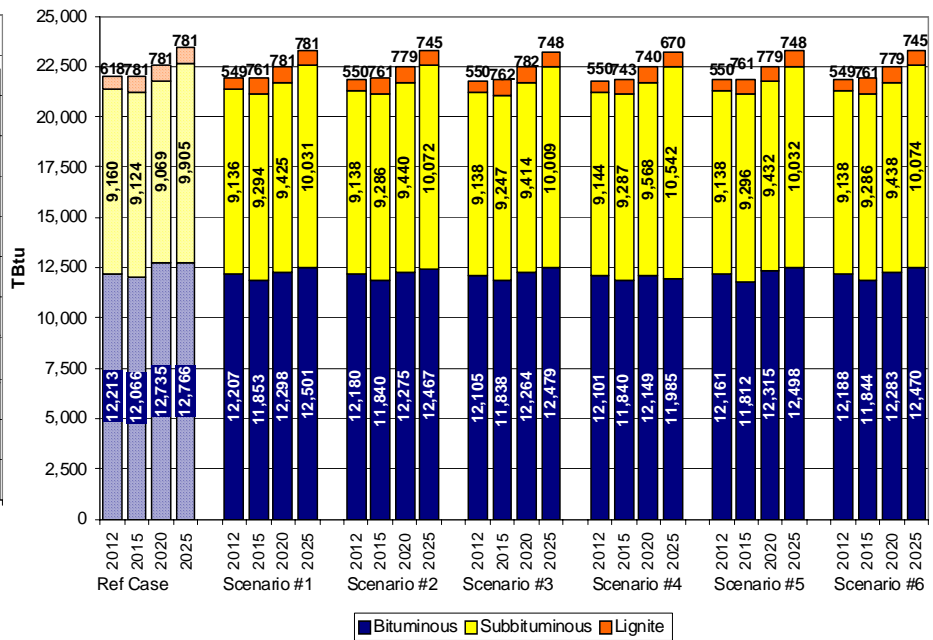
Currently, power sector NO_x emissions are more than 3 million tons annually, of which 2.4 million tons are in the Eastern region and 0.67 million tons are in the Western region. Power sector SO₂ emissions are approximately 7.6 million tons nationally.

Coal Production and Use in the Power Sector

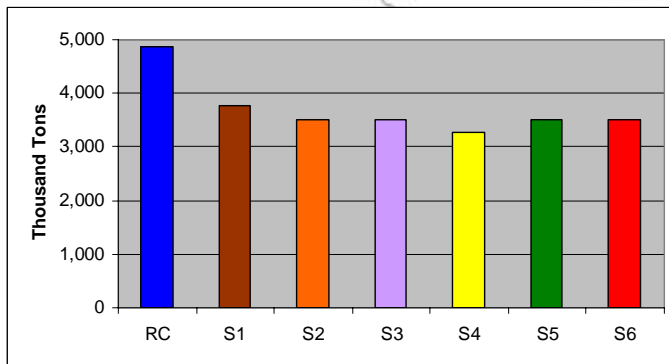
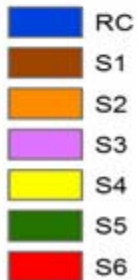
Coal Production by Region



Coal Use By Type

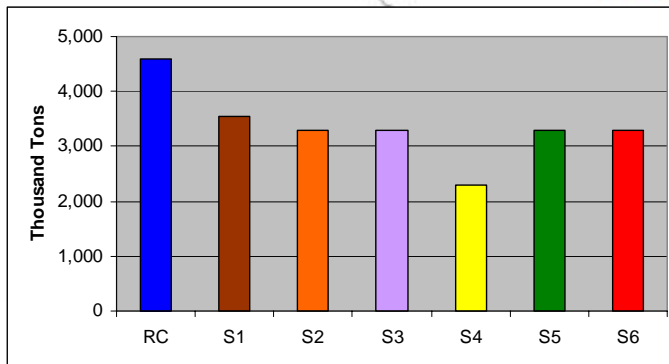
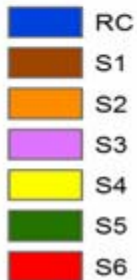


State-by-State Annual SO₂ Emission Levels, 2012



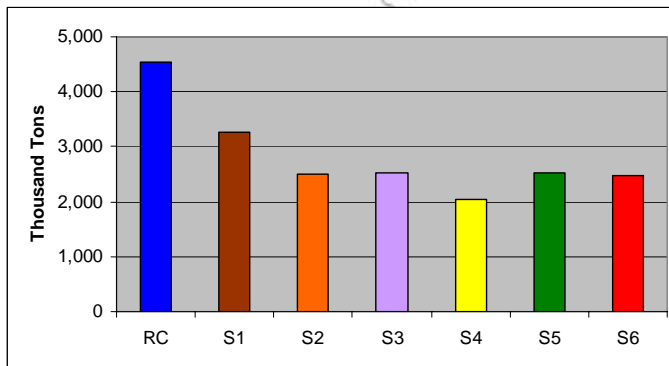
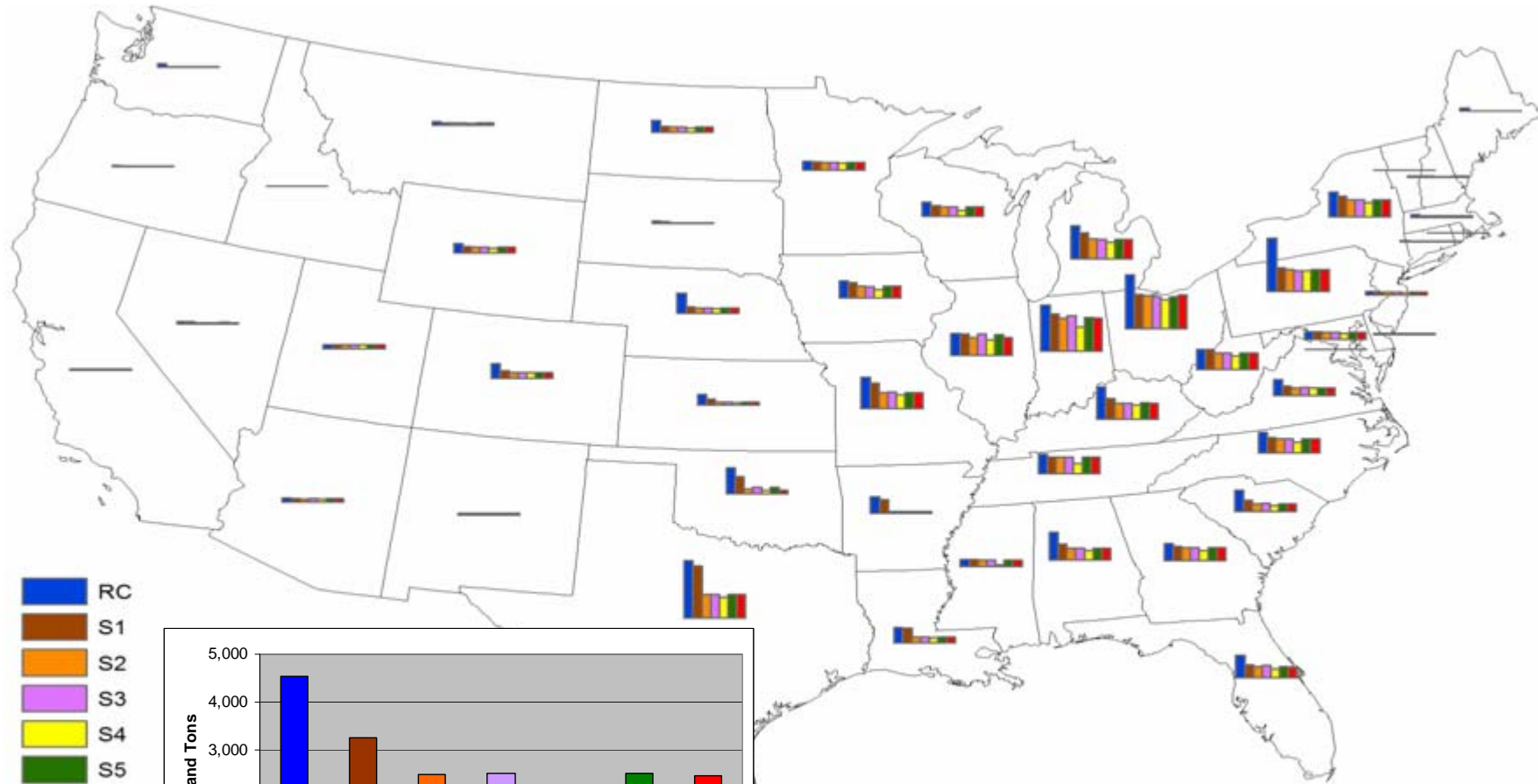
Largest bar equals 347 thousand tons of SO₂ in Indiana, RC
 Source: EPA 2009

State-by-State Annual SO₂ Emission Levels, 2015



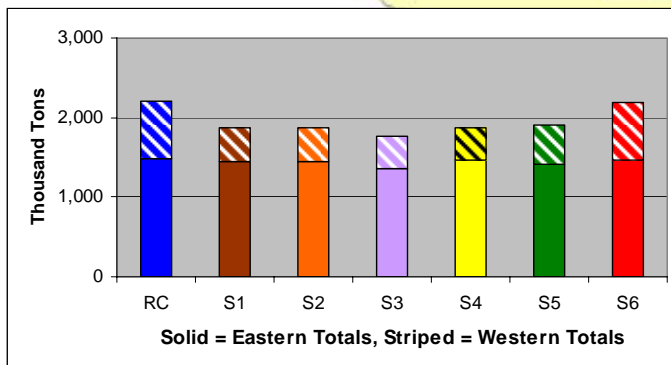
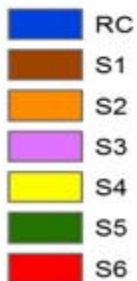
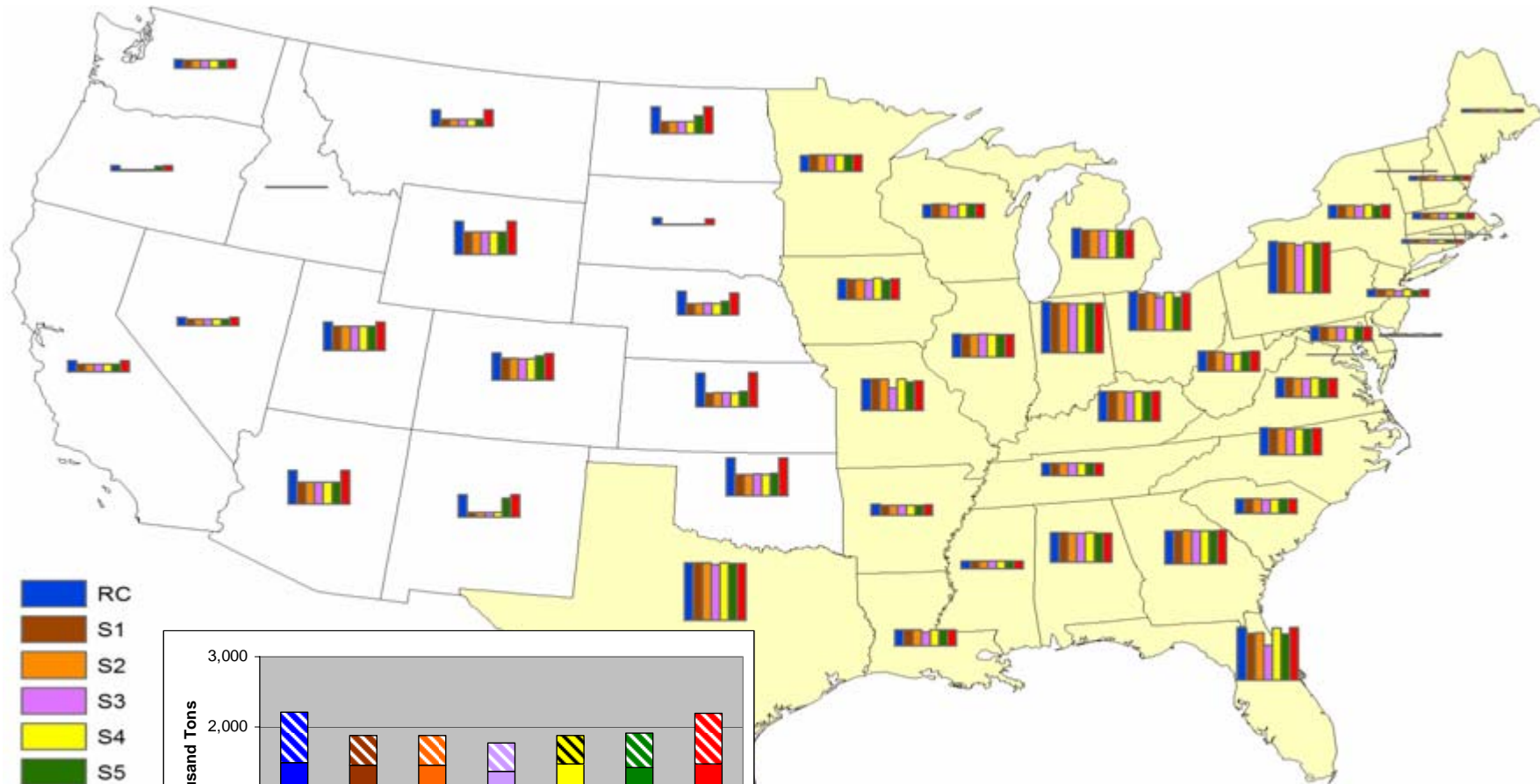
Largest bar equals 354 thousand tons of SO₂ in Texas, RC
 Source: EPA 2009

State-by-State Annual SO₂ Emission Levels, 2020



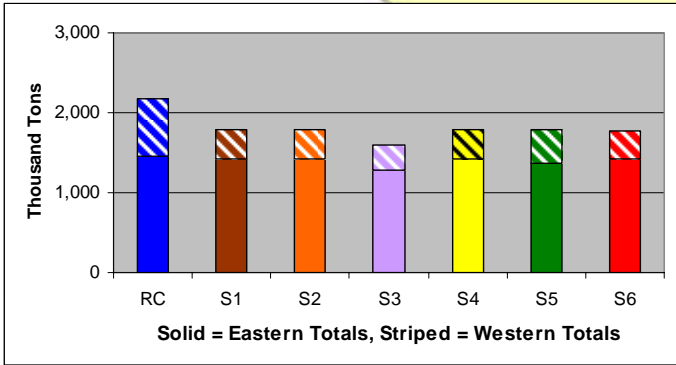
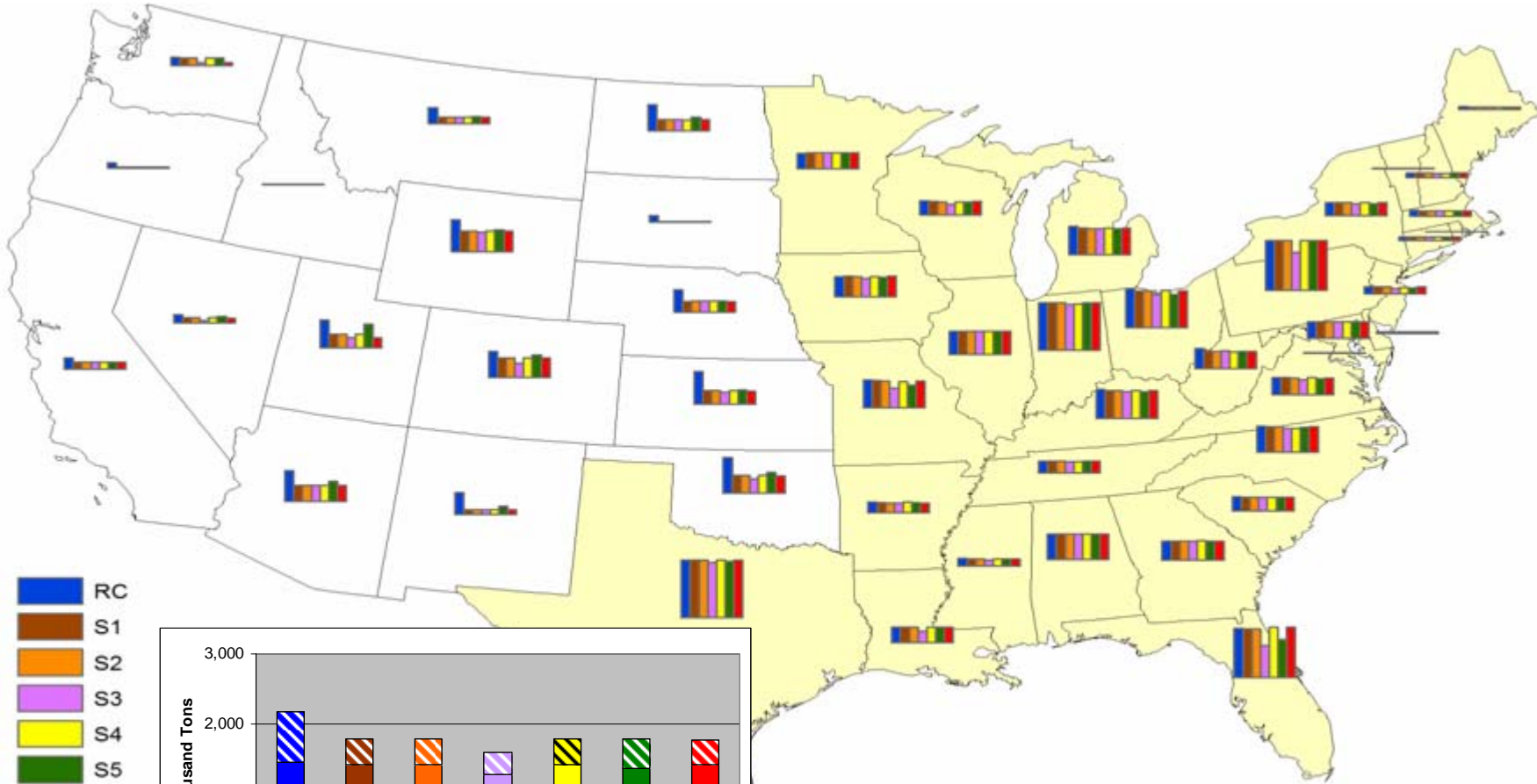
Largest bar equals 355 thousand tons of SO₂ in Texas, RC
 Source: EPA 2009

State-by-State Annual NO_x Emission Levels, 2012



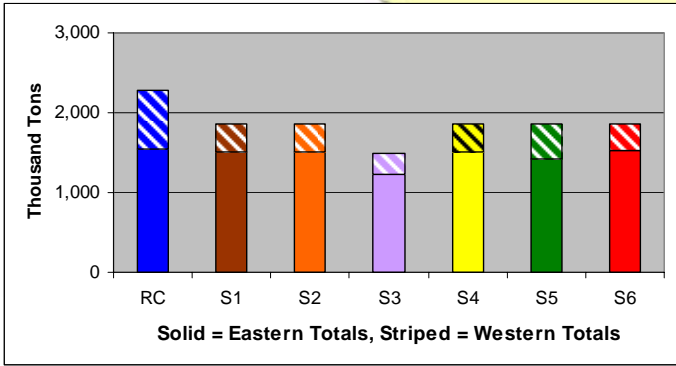
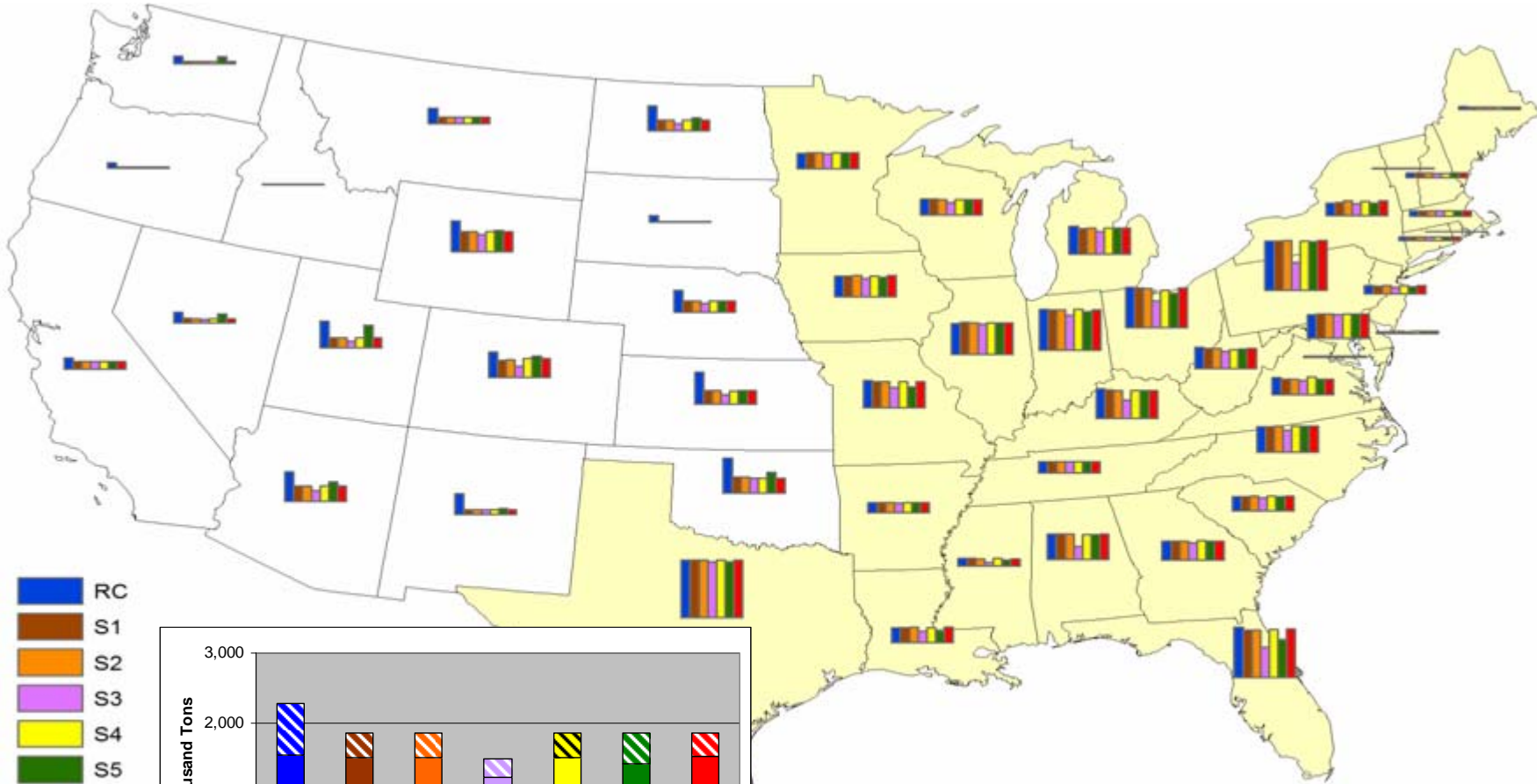
Largest bar equals 129 thousand tons of NO_x in Texas, S1, S2, S4
 Source: EPA 2009

State-by-State Annual NO_x Emission Levels, 2015



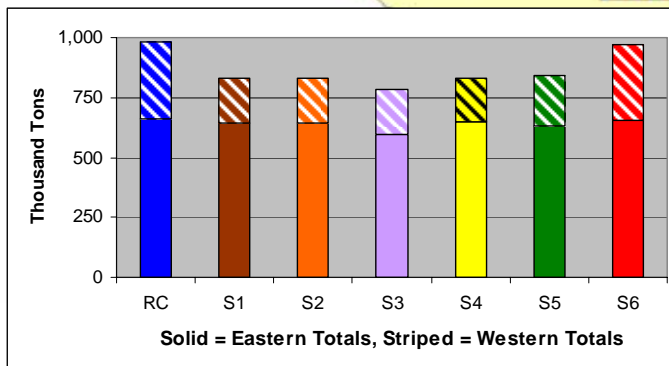
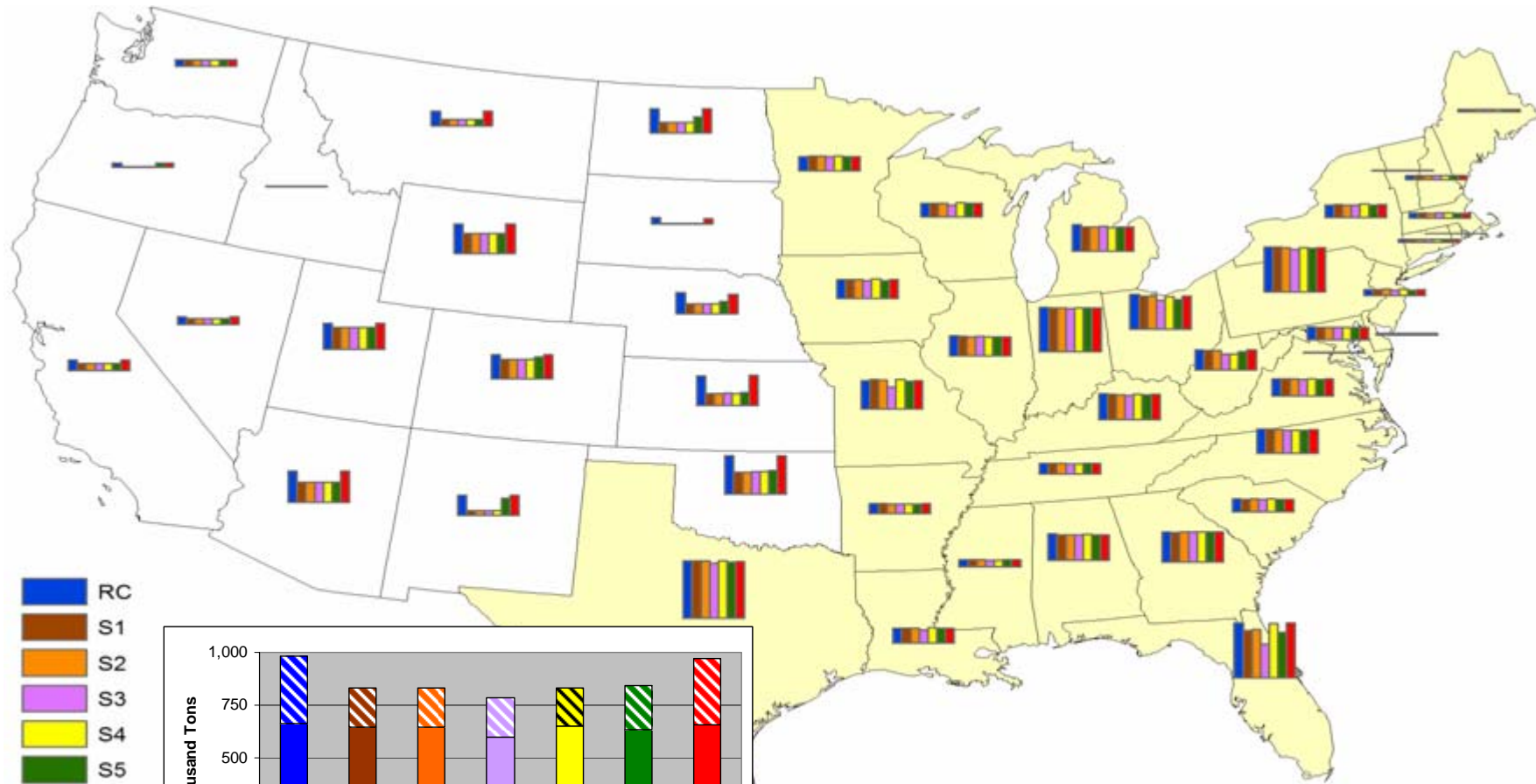
Largest bar equals 134 thousand tons of NO_x in Texas, S4, S6
 Source: EPA 2009

State-by-State Annual NO_x Emission Levels, 2020



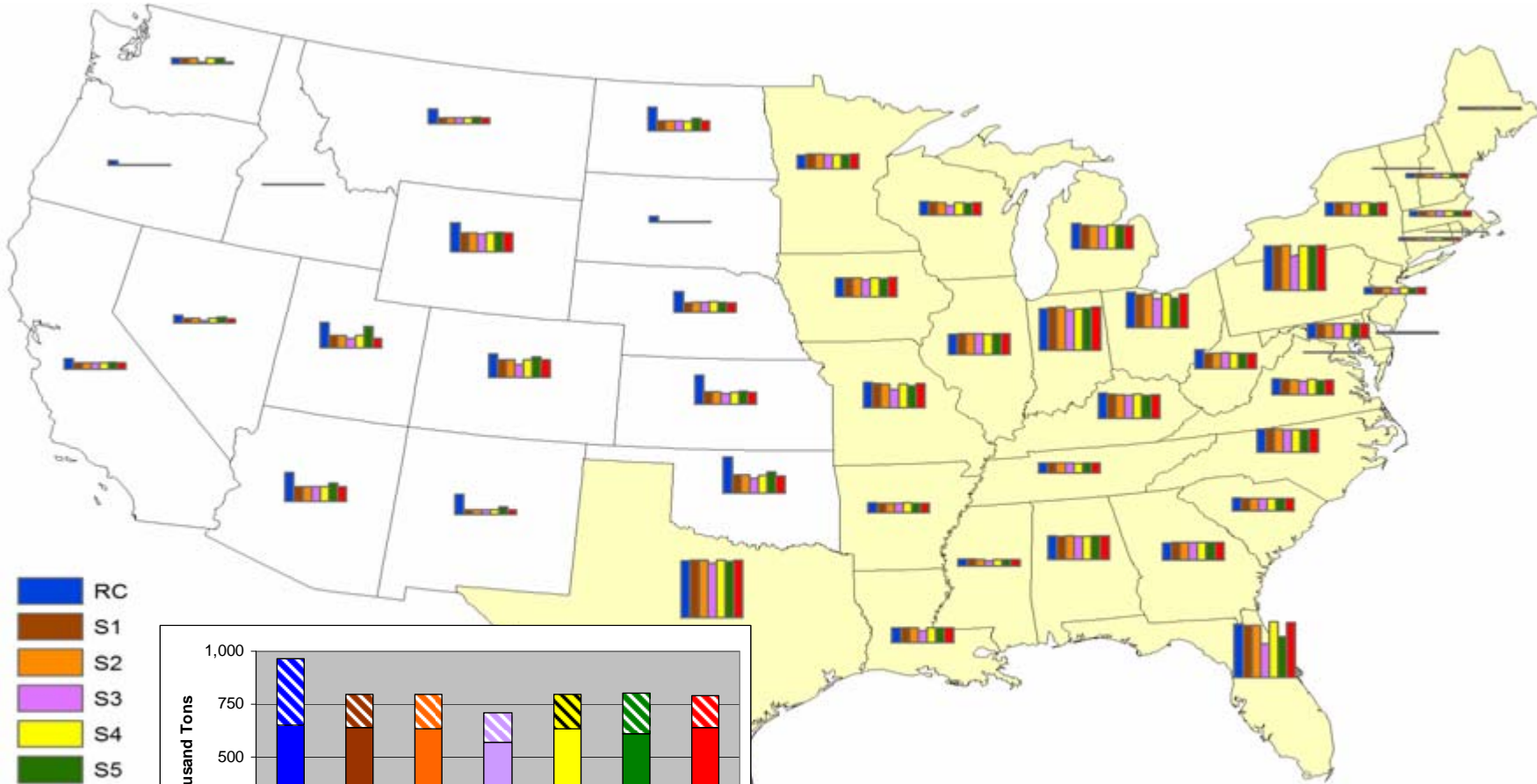
Largest bar equals 139 thousand tons of NO_x in Texas, S2, S4, S6
 Source: EPA 2009

State-by-State Ozone Season NO_x Emission Levels, 2012

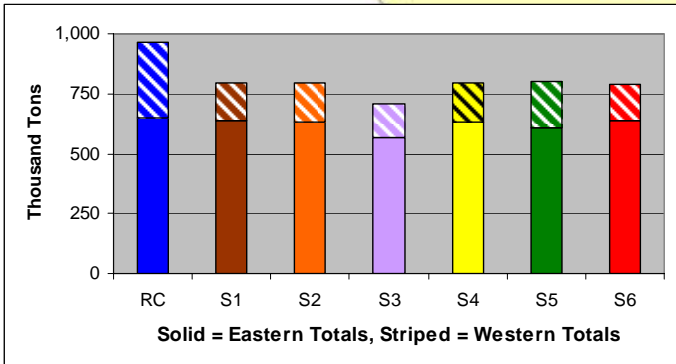


Largest bar equals 63 thousand tons of NO_x in Texas, S1, S2, S4
 Source: EPA 2009

State-by-State Ozone Season NO_x Emission Levels, 2015

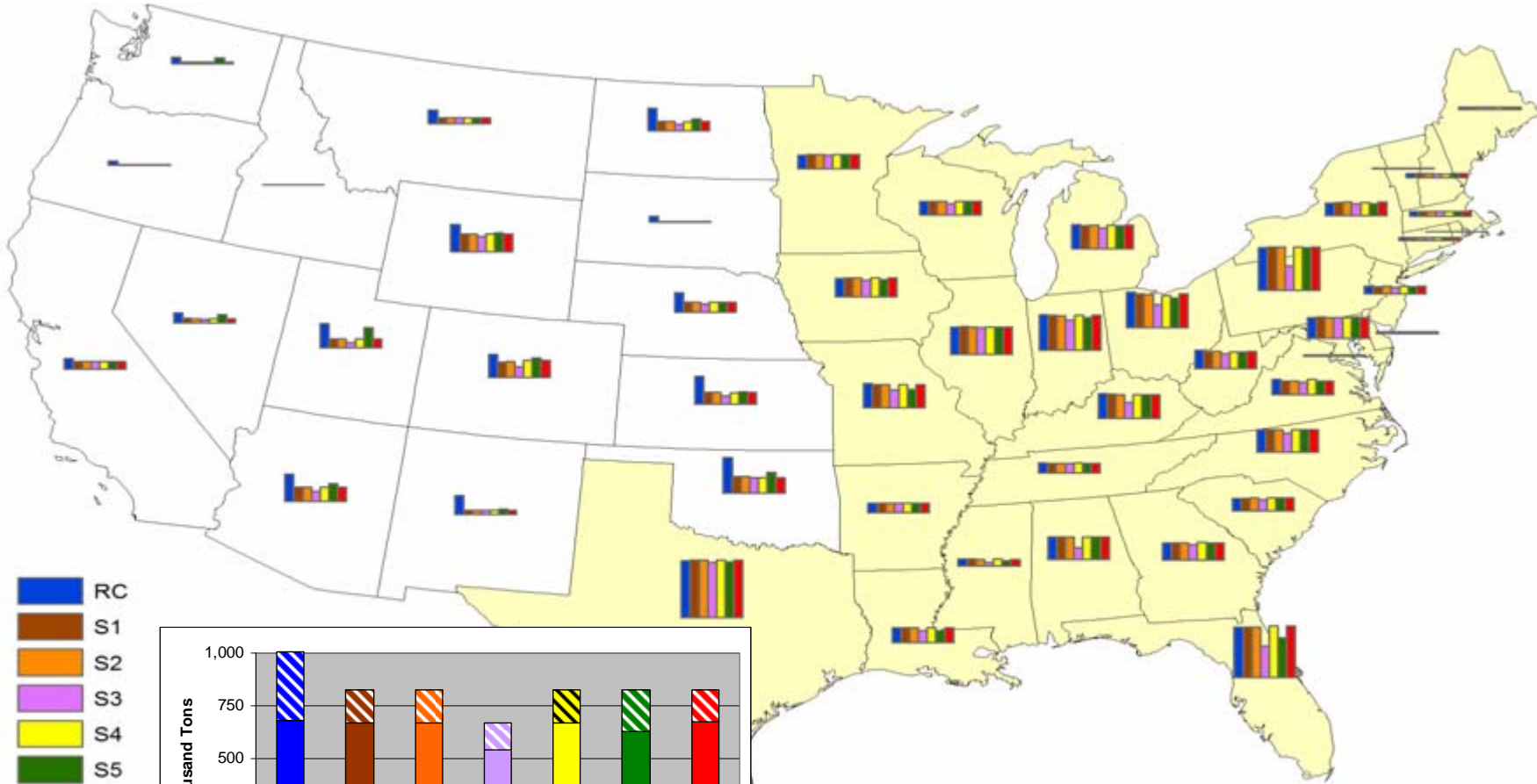


- RC
- S1
- S2
- S3
- S4
- S5
- S6

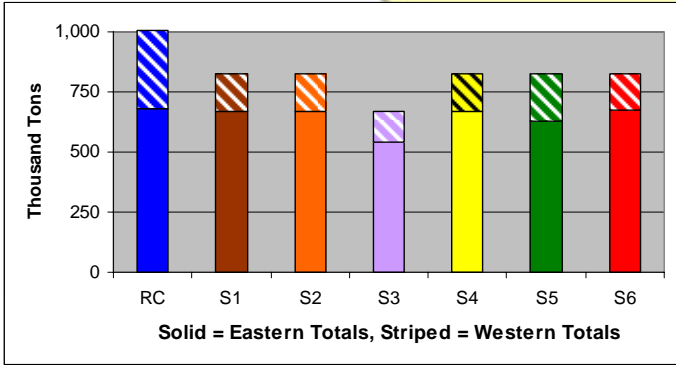


Largest bar equals 64 thousand tons of NO_x in Texas, S1, S2, S4, S6
 Source: EPA 2009

State-by-State Ozone Season NO_x Emission Levels, 2020



- RC
- S1
- S2
- S3
- S4
- S5
- S6



Largest bar equals 68 thousand tons of NO_x in Texas, S1, S2, S4, S6
 Source: EPA 2009