The Utility Challenge 2010-2020:

Climate and Environmental

Legislation, Regulation, Litigation

Gwen Eklund
President, A&WMA
Director, Power Generation Services
TRC

Gulf Coast Chapter, A&WMA
November 9, 2010

Overview

- Climate Change Landscape
  - Legislation
  - Litigation
  - State Activity
- EPA Regulatory Pathway
  - Carbon, air, water, ash
- Coal Fleet Transition Initiatives
  - Thinking outside the Business As Usual box

Industry Challenges

- Minimize economic impacts to consumers
- Continue environmental improvements
- Maintain system reliability
- Maintain fuel diversity options
- Obtain access to capital and cost recovery
- Negotiate myriad political landscapes

Climate Legislation

- Senate progress last session, but unable to close the deal
  - Fatigue from health care and financial reform
  - Reid unwilling to address even limited oil spill/energy bill before August recess
  - Unlikely to address climate before elections
- House members taking hits for “yes” votes on Waxman-Markey
- Lame duck activity?
- Prospects in next Congress?

Climate Legislation (2)

- Cap-and-trade approach on life support?
  - Seen as too complicated and too easy to "game" but has some White House buzz
  - Concerns about costs and regional disparities
- Other approaches proposed to date
  - Cap-and-dividend (Cantwell-Collins)
  - "Power sector plus" cap-and-trade (*e.g.*, Kerry-Lieberman)
- Each has same problem: needs 60 votes
- Pending EPA activity remains a catalyst

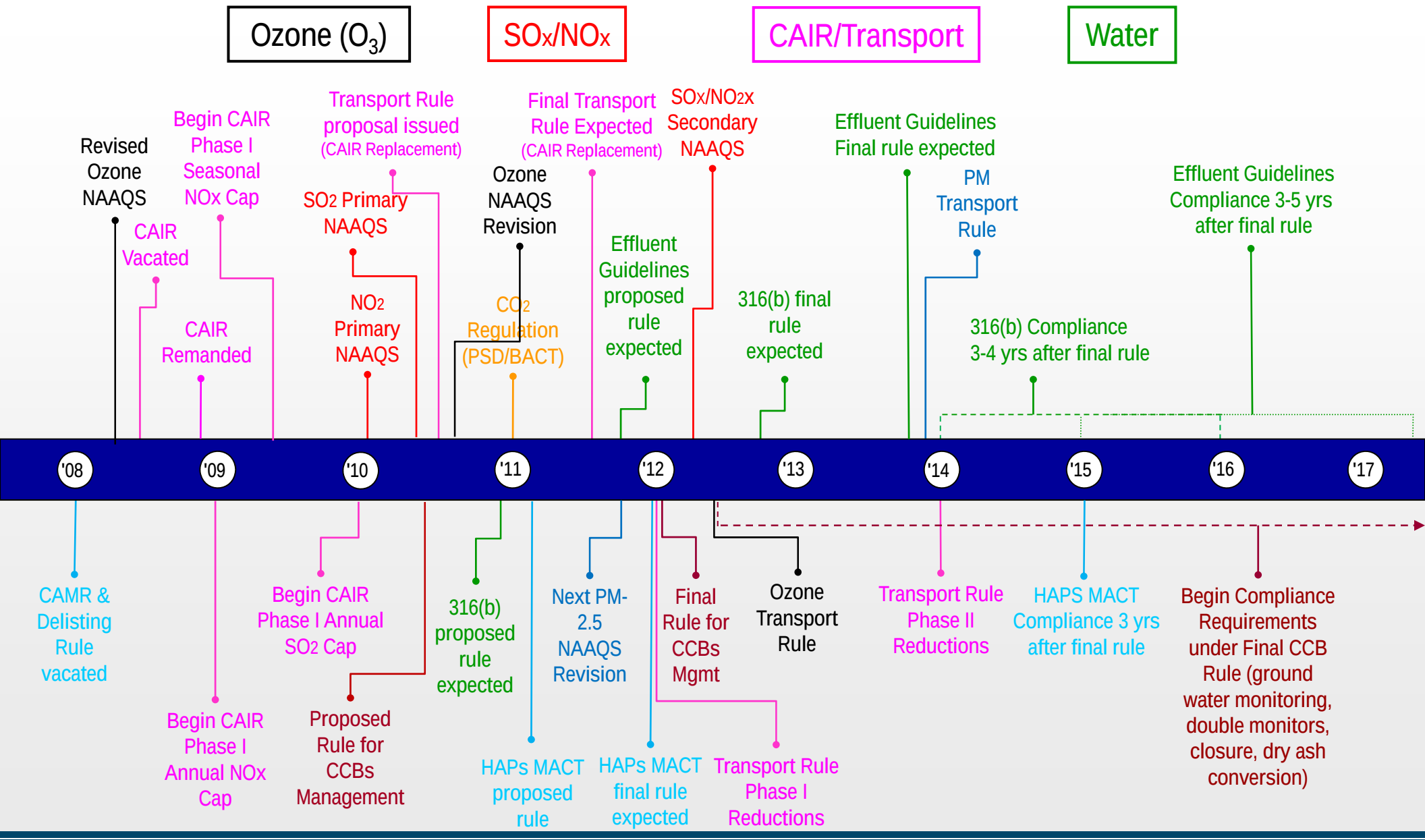
Climate Litigation

- Some courts have allowed states/individuals to sue GHG emitters under common law tort principles:
  - Connecticut v. AEP (2d Cir., Sept. 21, 2009): federal common law action that seeks CO_2 emissions reductions from five electric utilities; four have sought Supreme Court review
  - Comer v. Murphy Oil (5^{th} Cir., Oct. 16, 2009): federal and state tort law suit that seeks monetary damages from CO_2 emitters for Hurricane Katrina impacts; may be headed for Supreme Court
  - Kivalina v. ExxonMobil: native community seeking damages for moving village because of rising sea levels; district court disallowed suit, but appeal pending in 9^{th} Circuit
- In absence of legislation, tort suits against GHG emitters are expected to increase, following tobacco and asbestos precedents

State Climate Activities

- Regional programs continuing, albeit at different levels
  - RGGI (12 states)
  - MGGA (6 states)
  - WCI (6 states)
- CA law to take effect in 2012; ballot passed; may be more stringent in the future.
- Overall state activity could increase in absence of federal legislation…
- … *but* level of state opposition to increased costs in this economic landscape is also growing

Possible Timeline for Environmental Regulatory Requirements for the Utility Industry



-- Adapted from Wegman (EPA 2003) Updated 8.25.10

Carbon Regulation

- EPA finalized CAA regulations for GHG emissions:
  - Pre-construction permits addressing GHGs required for larger new and modified sources starting in 2011
  - Electric generating units among first sources regulated
- Will require BACT:
  - BACT is determined on case-by-case basis; uncertainty
  - EPA guidance
- New Source Performance Standards to follow soon
  - Eventually, will apply to existing fleet

Congressional Focus on EPA Progress

- Murkowski (R-AK) Resolution of Disapproval to prevent EPA regulation of GHGs under Clean Air Act
  - Failed to get 60 votes in June; Tea Party and Republicans may come back again this direction?
- Rockefeller (D-WV) introduced bill to delay EPA regulation by two years
  - Reid has not allowed vote; unclear whether it could get 60 votes
- Similar House efforts have failed, likely to be unavailing
- Unlikely to survive Presidential veto even if passed
- *But*…drumbeat of concern regarding costs continues

Mercury / HAPs Regulation

- Clean Air Mercury Rule: trading rejected by court
- EPA will regulate all HAPs for coal and oil units
- March 2011 proposal; November 2011 final decision
- 3-yr compliance period (1-yr extension possible)
- ICR data collection/testing program (almost $100M)
- New units before final rule: case-by-case MACT
- Issues: stringency, sub-categorization
- Implications: Various combinations of FGD, SCR, baghouses, ACI to control acid gases, metals, organics

CAIR Replacement: The "Transport Rule"

- Affects power companies in 31 eastern states
  - State emission budgets for NO_x and/or SO_2 (both for most states)
- Some power companies able to meet requirements due to combination of individual company approaches to addressing environmental issues, state requirements, fuel mix, and settlement agreements; other power producers have concerns:
  - New reduction requirements must be met only 6 and 30 months after final Transport Rule issued in mid-2011
  - Provides little long-term certainty because requirements will be superseded in near-future by subsequent Transport Rules addressing the 2010 ozone standards and the 2011 particulate matter standards
  - Constraints on emissions trading

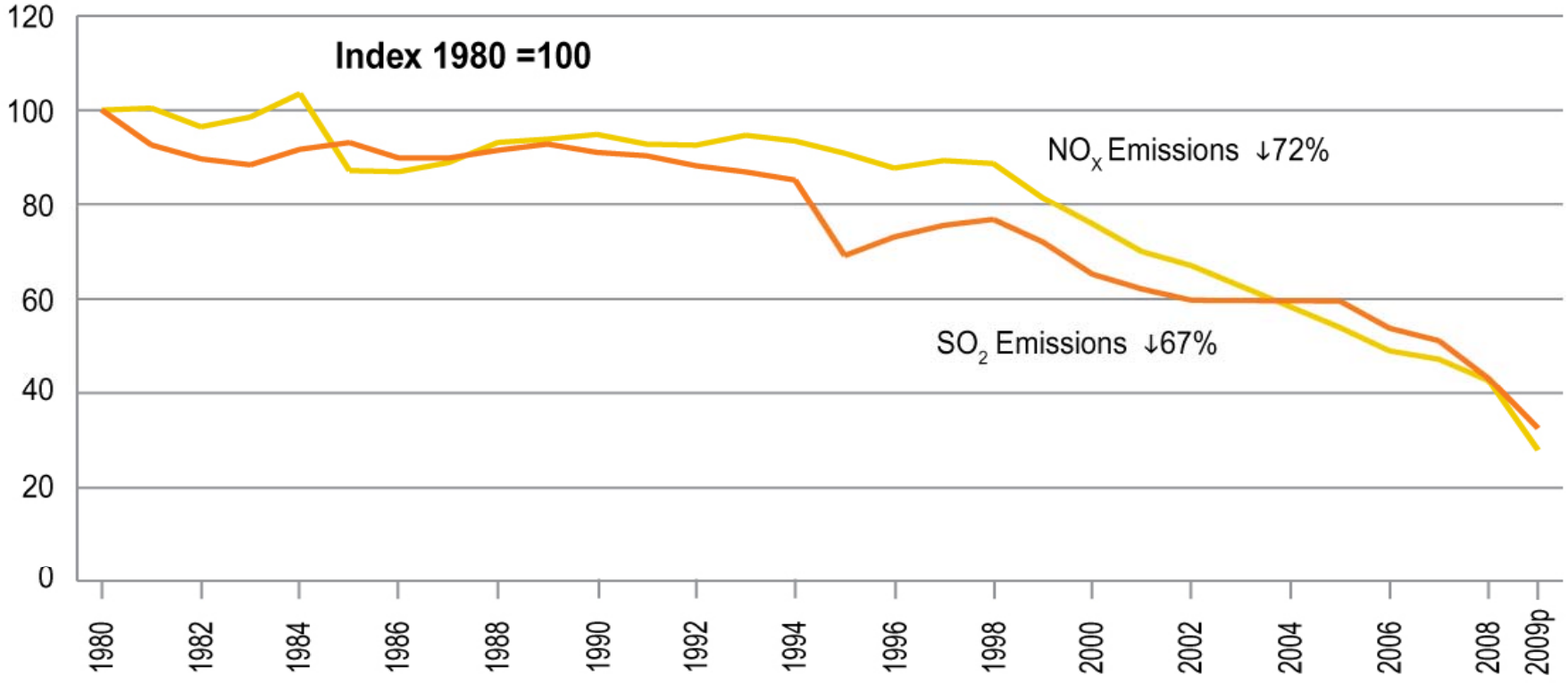
National Air Quality Standards

- New 1-hour NO_2 standard (January 2010) and new 1-hour SO_2 standard (June 2010) present permitting challenges
  - The new SO_2 standard must be met via both monitoring and modeling for an area to be “in attainment”
- Tightening of 2008 ozone standard
  - EPA has predicted implementation cost in 2020 of $50-90 billion (for all emission sources) for the low end of its proposed range (0.06 ppm)
- Tightened PM proposal expected ~February 2011
- New ozone and PM standards will drive new Transport Rules
- State Implementation Plans: EGUs in bulls-eye due to perceived cost-effectiveness

Sector SO_2 and NO_x Emissions Down

- EPA's Clean Air Markets Division website:
  - National SO_2 emissions from power plants in 2009 were 64 percent lower than in 1990
  - National power plant NO_x emissions declined 70 percent over the same time period
  - Power generation NO_x emissions during the ozone season in the 20-state Eastern region regulated for summer ozone declined 81 percent since 1990

Electric Power SO_2 and NO_X Emissions



p = preliminary

1980 represents the base year. Graph depicts increases or decreases from the base year.

Source: U.S. Environmental Protection Agency (EPA)

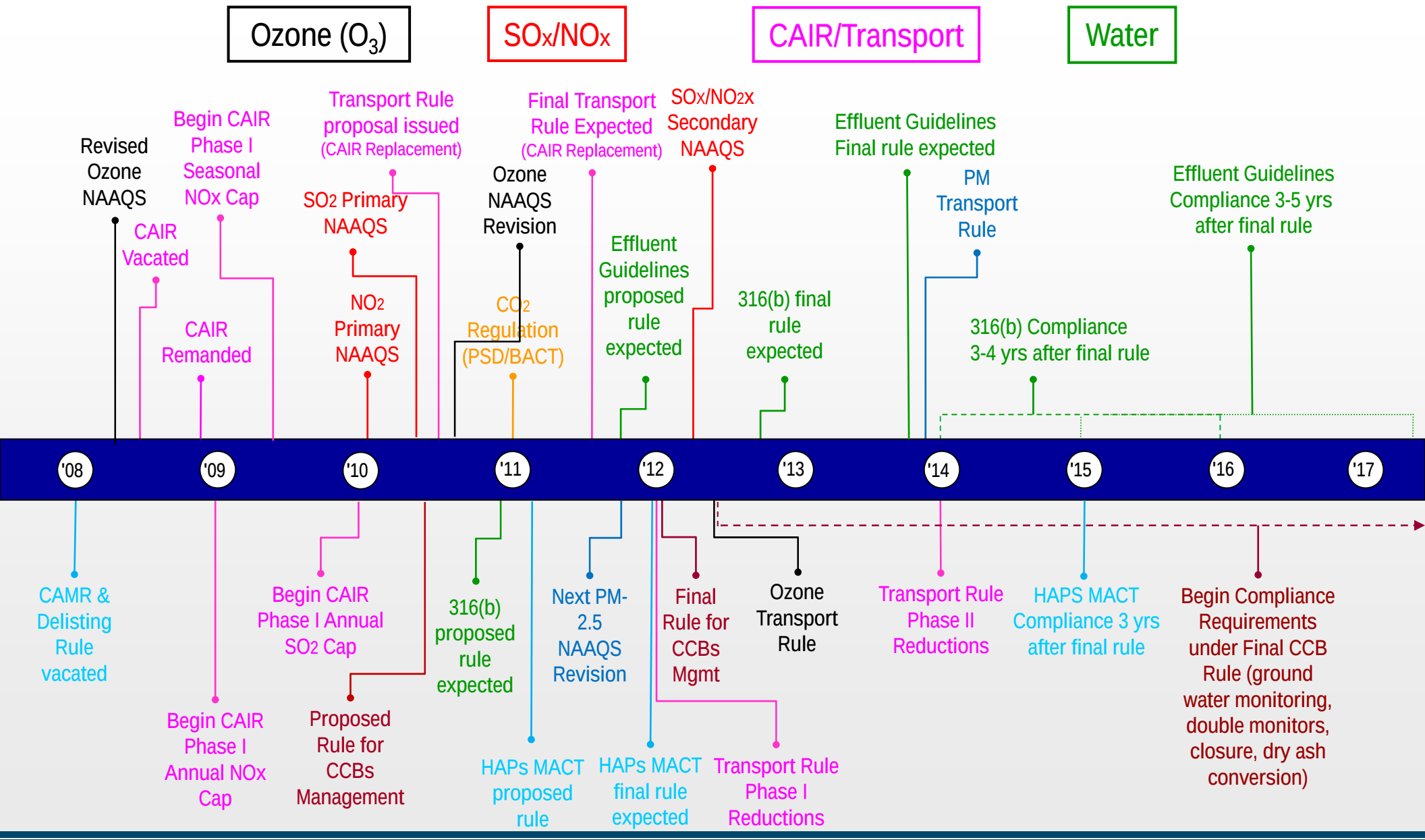
Coal Combustion Residuals (CCR)

- Co-proposal of two options in June (75 Fed. Reg. 35128):
  - Subtitle C, “Special” hazardous waste listing; Subtitle D regulations
  - Beneficial use exempt from regulation
  - Soliciting input on other options, restrictions on beneficial use
- Subtitle C option would reverse 1993 & 2000 Regulatory Determinations
- Majority of states, ash recyclers, industry groups, large number in Congress oppose hazardous waste regulations
- Will significantly impact operations: closure of ash ponds, construction of additional disposal capacity, reductions in beneficial use
- Comments due in November; Final Rule not likely before 2012

Cooling Water Intake Structures

- EPA implementing 316 in several phases:
  - Timing: revised proposal due ~October 2010; final rule in 2012
  - Technology: whether cooling towers are Best Technology Available
  - Flexibility: whether to allow cost-benefit analyses to balance environmental impacts of a technology
- Any retrofit mandate could cause premature closures, extended outages, and significantly impact rates and capacity margins

Possible Timeline for Environmental Regulatory Requirements for the Utility Industry



-- Adapted from Wegman (EPA 2003) Updated 8.25.10

Industry's Predicament

- Have to comply with pending EPA regulations on air (SO_2, NO_x, mercury, *etc.*), water, and coal ash on or around 2015
  - Will require retrofit, retirement or replacement of substantial portion of existing coal fleet in short period of time
  - Could impact reliability; need to assess feasibility; regional differences
- Could cost up to $200 billion/year by 2015
  - Industry already has capital expenditures of $80 billion annually
  - Can it be raised? At what cost?
- Need carbon policy or face possibility of stranding investments
  - Dramatically changes economic outlook and impacts on coal fleet
  - Implementation of EPA regulation of stationary sources begins in 2011
  - Congress unlikely to pass climate legislation this year; next Congress?
  - Regulation is less certain than legislation; litigation likely
- Need to resolve to help smooth the transition of current coal fleet
  - Need planning and investment certainty to meet future demand; ensure industry can meet regulations while maintaining system reliability

The Next 10 Years Are Critical

- Need better coordination within EPA on air, water and waste rules; carbon too
- EPA coordination with sister agencies
- New technologies need to be encouraged (and funded), and phased in logically
- Implementation schedule must factor in material and labor needs, retrofit windows
- Need to expedite consideration of permits

For more information contact:

A. Gwen Eklund

Director, Power Generation and GHG Services

TRC Environmental Corporation

Tel: **512-684-3106**

E-mail: *geklund@trcsolutions.com*