

Cement



bringing materials to *life*

# Industry Regulation: What it Might Mean for Concrete?

Minneapolis, MN March, 2010



# Legislation and Environmental Issues Facing “Our” Industry

- CO2 Legislation and Regulation
- PC MACT (Portland Cement Maximum Allowable Control Technology)
- Hazardous Waste Designation for Fly Ash



# Legislation and Environmental Issues Facing “Our” Industry

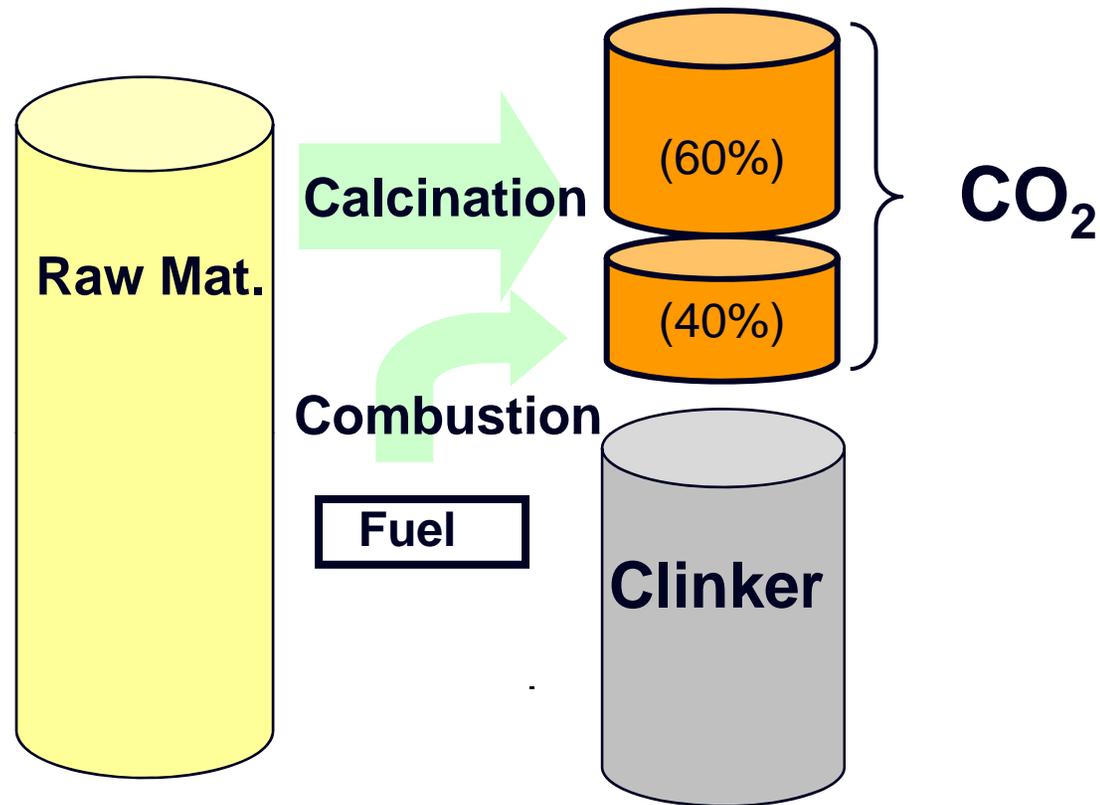
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# CO2

- Where does CO2 come from?
- Current Landscape of CO2 Legislation
- What is the Potential Impact on Cement & Concrete Industry
- What is being done to address the challenge in North America

# Accounting for CO<sub>2</sub> production...



- From the raw mix calcination of limestone (Approx 60%)
- From the combustion into the pre-calciner & kiln (Approx 40%)
- Indirectly, electricity used for plant operations

# Current Landscape of Government Influence...3 Dynamics in Play

## 1. Federal Legislation

- Appears that Waxman – Markey approach will not move thru the Senate in 2010



## 2. Federal Regulation (EPA)

- EPA is moving an agenda to regulate Transportation (cars, trucks, rail, air) via fuel efficiency
- EPA has established a regulatory schedule to subject large stationary sources: power, cement, chemical, petroleum by 2011

## 3. Patchwork of State initiatives

# America Clean Energy & Security Act

(ACES, or Waxman-Markey H.R. 2454)



- Cap and Trade System
  - Economy-wide cap in 2030 = 58% of 2005 Greenhouse Gas (GHG) emissions
  
- Free allowance allocation program
  - Provides transition support to energy-intensive, trade-exposed (EITE) industries by allocating free CO2 allowances
  - Allowance Sources for a company in a given year

# Three Challenges with this legislation:

## 1. Unpredictable

- Who is Eligible for free allowances.
- Industry benchmark reset every 4 years.
- Reduction of Free Allowances

## 2. Level Playing Field

- Leakage to Importers
- Allocation of free credits based on C/K vs manufacturing efficiency

## 3. Complex





# What is the Potential Impact on the Industry



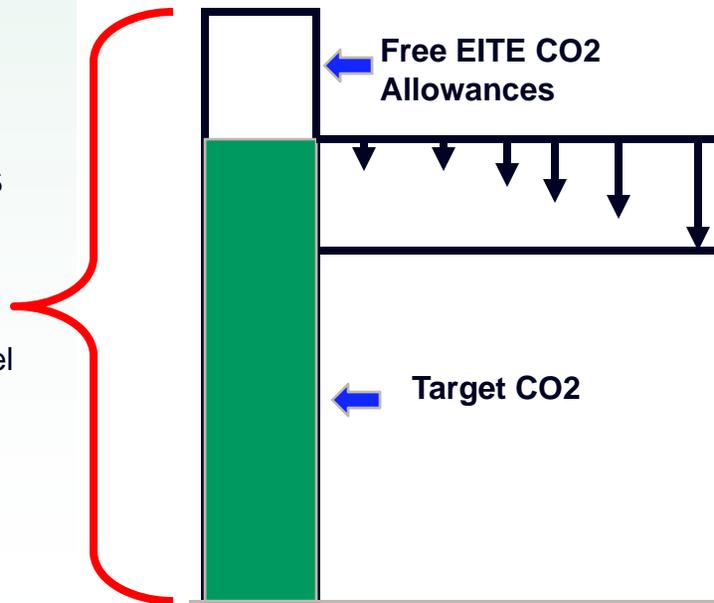
Allowances will be determined for all industries including Cement



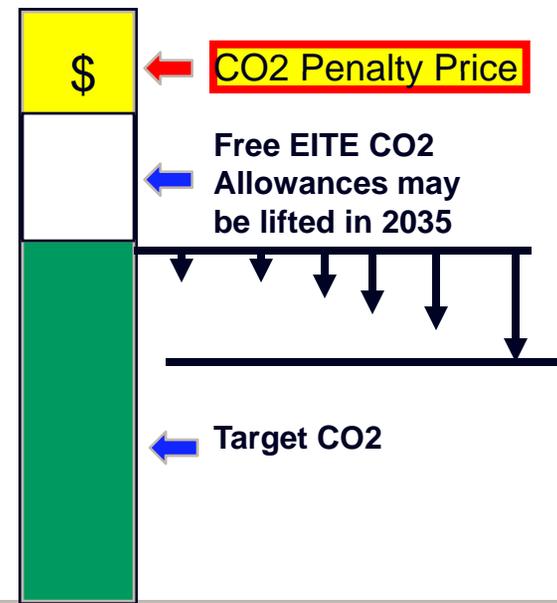
## Typical Plant CO2 Emissions

Emissions will remain fairly constant, and equal the level of allowances initially

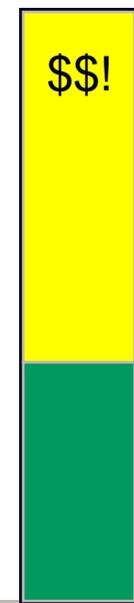
Minimal CO2 Penalty Price



\$ Increasing



\$ Substantial



# Putting it all together...regarding CO2



- If and When CO2 Legislation at the Federal Level Arrives:
  - Some form of CO2 cost will apply, although still a lot of uncertainty.
  - CO2 costs will drive increased production costs.
  - Manufacturers will likely transition towards producing more blended cements where possible to reduce overall CO2 emissions.



# What is the Industry doing to address the challenge in North America

- Clear objective to reduce CO2 by:
  - Continuing to Improve Process Efficiencies
  - Increase Alternative Fuels, Bio Fuels and Alternative Raw Materials
  - Use less clinker per yard of concrete



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## Portland Cement Maximum Allowable Control Technology (PC MACT)

### What is it . . .

- New air emission reduction obligations for the entire cement industry.
- Targets mercury, dust, organics, acid gas
- Proposed in 2009, expected to be finalized mid-2010, impacting producers 2013

### What it could impact . . .

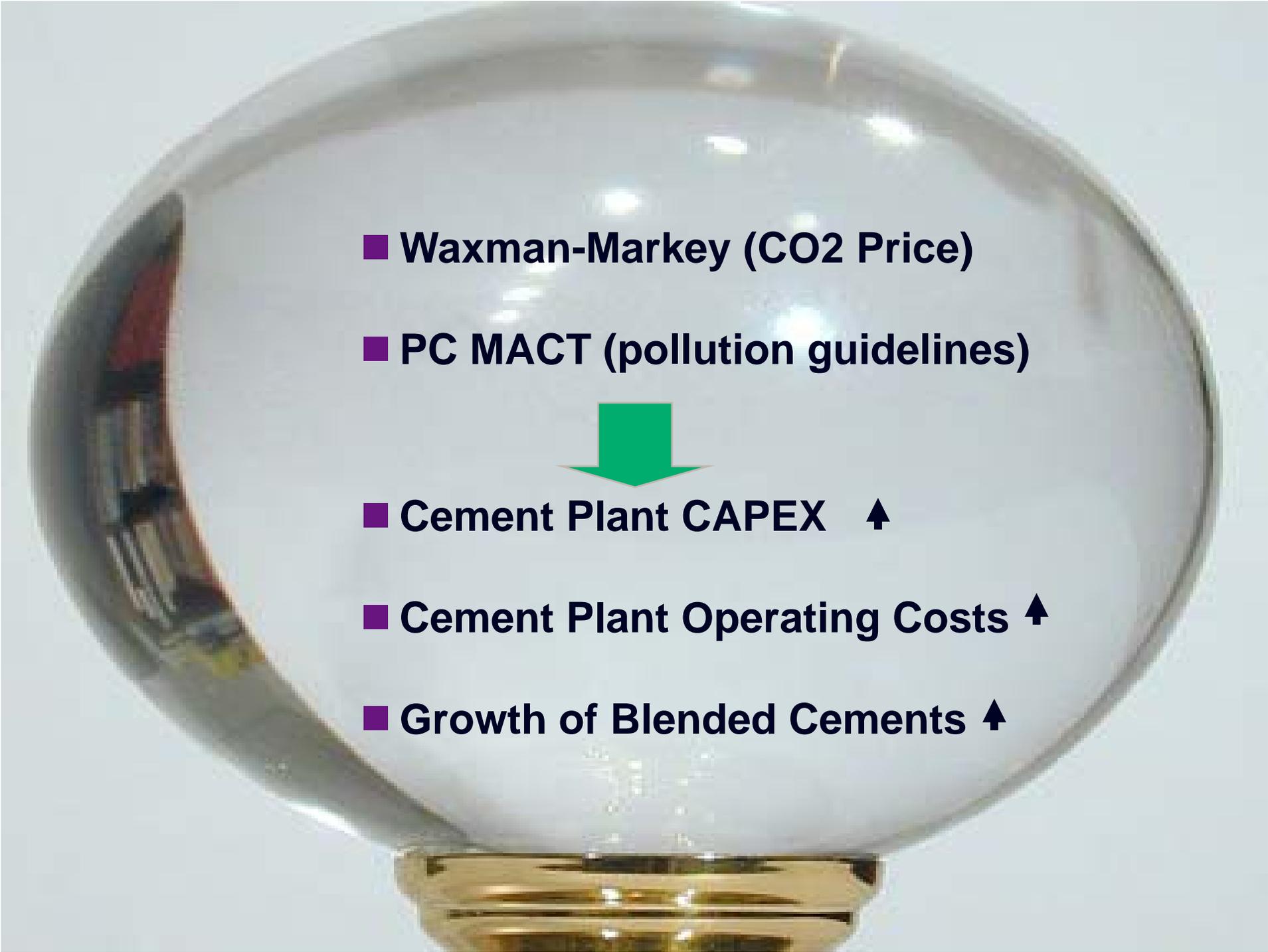
- Potentially will require the installation of costly scrubbers and other pollution controls
- Affecting investments and even “staying in business” decisions for some plants



## Portland Cement Maximum Allowable Control Technology (PC MACT)

### The magnitude of impact . . . .

- EPA estimates over \$340m in cost impact and 10% drop in domestic production due to plant closures:
- PCA estimates as many as 30 plant closings and significant investments on remaining plants
  - 20% of domestic production closure at risk
  - Up to 20% increase in cement cost
- Southern Methodist University study (Feb, 2010) , confirms PCA estimates and the significant economic impact to US construction projects



■ Waxman-Markey (CO2 Price)

■ PC MACT (pollution guidelines)



■ Cement Plant CAPEX ↑

■ Cement Plant Operating Costs ↑

■ Growth of Blended Cements ↑

