

Federal Coal Ash Policy Update



TEXAS COAL ASH USERS GROUP

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WARNING!



The following presentation includes information and analysis regarding legislative and regulatory policies established in Washington, D.C., and the processes for determining those policies. Logic and natural laws of physics may not apply. Readers with backgrounds in engineering or the physical sciences may find this material offensive...

News Item: New Element Discovered

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PERIODIC CHART

1 H Hydrogen 1.0																	2 He Helium 4.0
3 Li Lithium 6.9	4 Be Beryllium 9.0											5 B Boron 10.8	6 C Carbon 12.0	7 N Nitrogen 14.0	8 O Oxygen 16.0	9 F Fluorine 19.0	10 Ne Neon 20.2
11 Na Sodium 22.9	12 Mg Magnesium 24.3											13 Al Aluminum 27.0	14 Si Silicon 28.1	15 P Phosphorus 31.0	16 S Sulfur 32.1	17 Cl Chlorine 35.5	18 Ar Argon 39.9
19 K Potassium 39.1	20 Ca Calcium 40.1	21 Sc Scandium 44.9	22 Ti Titanium 47.9	23 V Vanadium 50.9	24 Cr Chromium 52.0	25 Mn Manganese 54.9	26 Fe Iron 55.8	27 Co Cobalt 58.9	28 Ni Nickel 58.7	29 Cu Copper 63.5	30 Zn Zinc 65.4	31 Ga Gallium 69.7	32 Ge Germanium 72.6	33 As Arsenic 74.9	34 Se Selenium 78.9	35 Br Bromine 79.9	36 Kr Krypton 83.8
37 Rb Rubidium 85.5	38 Sr Strontium 87.6	39 Y Yttrium 88.9	40 Zr Zirconium 91.2	41 Nb Niobium 92.9	42 Mo Molybdenum 95.9	43 Tc Technetium 98	44 Ru Ruthenium 101.1	45 Rh Rhodium 101.1	46 Pd Palladium 106.4	47 Ag Silver 107.9	48 Cd Cadmium 112.4	49 In Indium 114.8	50 Sn Tin 118.7	51 Sb Antimony 121.8	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.3
55 Cs Cesium 132.9	56 Ba Barium 137.3	57-71 Lanthanides	72 Hf Hafnium 178.5	73 Ta Tantalum 180.9	74 W Tungsten 183.8	75 Re Rhenium 186.2	76 Os Osmium 190.2	77 Ir Iridium 192.2	78 Pt Platinum 195.1	79 Au Gold 197.0	80 Hg Mercury 200.6	81 Tl Thallium 204.4	82 Pb Lead 207.2	83 Bi Bismuth 208.9	84 Po Polonium 209	85 At Astatine 210	86 Rn Radon 222.0
87 Fr Francium 223.0	88 Ra Radium 226.0	89-103 Actinides	104 Rf Rutherfordium 261	105 Db Dubnium 262	106 Sg Seaborgium 263	107 Bh Bohrium 262	108 Hs Hassium 265	109 Mt Meitnerium 266	110 Uun Ununium 272	111 Gv Governmentium 273							

111

Gv

Governmentium

312

Inert/Worthless

Color of Elements, Etc.

- Alkali metals
- Alkaline earth metals
- Transition metals
- Lanthanides
- Actinides
- Inert gases
- Other metals
- Semimetals
- Nonmetals
- IAA & gas
- Inert/Worthless

57 La Lanthanum 138.9	58 Ce Cerium 140.1	59 Pr Praseodymium 140.9	60 Nd Neodymium 144.2	61 Pm Promethium 145	62 Sm Samarium 150.4	63 Eu Europium 151.9	64 Gd Gadolinium 157.3	65 Tb Terbium 158.9	66 Dy Dysprosium 162.5	67 Ho Holmium 164.9	68 Er Erbium 167.3	69 Tm Thulium 168.9	70 Yb Ytterbium 173.0	71 Lu Lutetium 174.9
89 Ac Actinium 227	90 Th Thorium 232.0	91 Pa Protactinium 231.0	92 U Uranium 238.0	93 Np Neptunium 237.0	94 Pu Plutonium 242.0	95 Am Americium 243.0	96 Cm Curium 247.0	97 Bk Berkelium 247.0	98 Cf Californium 251.0	99 Es Einsteinium 252.0	100 Fm Fermium 257.0	101 Md Mendelevium 258.0	102 No Nobelium 259.0	103 Lr Lawrencium 260.0

Is This the Most Powerful Natural Force?



Governmentium (Gv)

- The new element has no protons or electrons, thus having an atomic number of 0. It does, however, have 1 neutron, 125 deputy neutrons, 75 supervisory neutrons, and 111 team leader neutrons, giving it an atomic mass of 312.
- These 312 particles are held together by a force called morons, that are surrounded by vast quantities of lepton-like particles called peons. Since it has no electrons, Governmentium is inert. However, it can be detected as it impedes every reaction with which it comes into contact.
- According to the discoverers, a minute amount of Governmentium causes one reaction to take over four days to complete when it would normally take less than a second. Governmentium has a normal half-life of approximately three years. It does not decay but instead undergoes a reorganization in which a portion of the deputy neutrons, supervisory neutrons, and team leader neutrons exchange places. In fact, Governmentium mass will actually increase over time, since, with each reorganization, some of the morons inevitably become neutrons, forming new isodopes.
- This characteristic of moron promotion leads some scientists to speculate that Governmentium is formed whenever morons reach a certain quantity in concentration. This hypothetical quantity is referred to as the "Critical Morass."

Coal Ash Regulatory History

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1980 Bevill Amendment to Resource Conservation and Recovery Act

Instructed EPA to "conduct a detailed and comprehensive study and submit a report" to Congress on the "adverse effects on human health and the environment, if any, of the disposal and utilization" of coal ash

1988 and 1999 EPA Reports to Congress

Recommended coal ash should not be regulated as hazardous waste

1993 EPA Regulatory Determination

Found regulation as a hazardous waste "unwarranted"

2000 EPA Final Regulatory Determination

Concluded coal ash materials "do not warrant regulation [as hazardous waste]" and that "the regulatory infrastructure is generally in place at the state level to ensure adequate

Good News and Bad News Since 2000

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Good News

Beneficial use rate of coal ash increased from 30% to 43%
EPA cooperating in encouraging beneficial use through its C2P2 (Coal Combustion Products Partnership) program

Bad News

CCP disposal issues attracting increased attention from regulators, news media and environmental activists

Several incidents fuel the attention – for example:

2005 – Approx. 100 million gallons of water and ash spill from Martins Creek power plant impoundment into Delaware River. Resulted in a \$1.5 million lawsuit settlement for PPL.

2007 – A 12-year project using coal ash to fill a Gambrills, MD, quarry halted because of local groundwater contamination. Resulted in \$1 million state fine to Constellation Energy, a class action lawsuit and revision of Maryland disposal regulations

Kingston Power Plant Impoundment Failure



- December 22, 2008, failure of containment dike released 5.4 million cubic yards (approx. 1 billion gallons) of ash slurry

- Approx. 300 acres, several homes, and portions of Emory River affected.

- Fortunately, no deaths or injuries.



Alphabet Soup



- December 2008 failure of the Kingston power plant ash disposal impoundment prompted new EPA rulemaking activity – *but EPA under no legislative or judicial deadline for action*
- Solid waste federal regulation is under the Resource Conservation and Recovery Act (RCRA)
- RCRA Subtitle D pertains to municipal and industrial wastes
 - Rules made by federal EPA
 - Rules enforced by the states
- RCRA Subtitle C pertains to hazardous wastes
 - Rules made and enforced by federal EPA

EPA's 2010 RCRA Proposal



- The Environmental Protection Agency has proposed two options for future regulation:
 - Subtitle C **when disposed**
 - Subtitle D
- *Proposed landfill construction standards are essentially the same under both proposals*
 - Primary justification for Subtitle C proposal is to enable federal enforcement authority
- Beneficial use of coal ash exempt from regulation under both scenarios
 - However, EPA is seeking comments on beneficial uses that imply further rulemaking activity may be forthcoming
 - Uses such as structural fills and embankments more likely to see increased regulatory scrutiny

The Trouble with “C”

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- Truck turns left to go to landfill it's hazardous waste; Truck turns right to go to your home, school or road project it's not
 - Will utilities still supply it?
 - Will specifiers still allow it?
 - Will it require special handling, transportation placarding, employee training, etc.?
 - What happens if you spill some?
 - What happens at the end of the concrete's service life?
 - Will end users object to having it in their concrete?
 - Will class action attorneys find a new source of income?

Regulatory Uncertainty Harming Recycling

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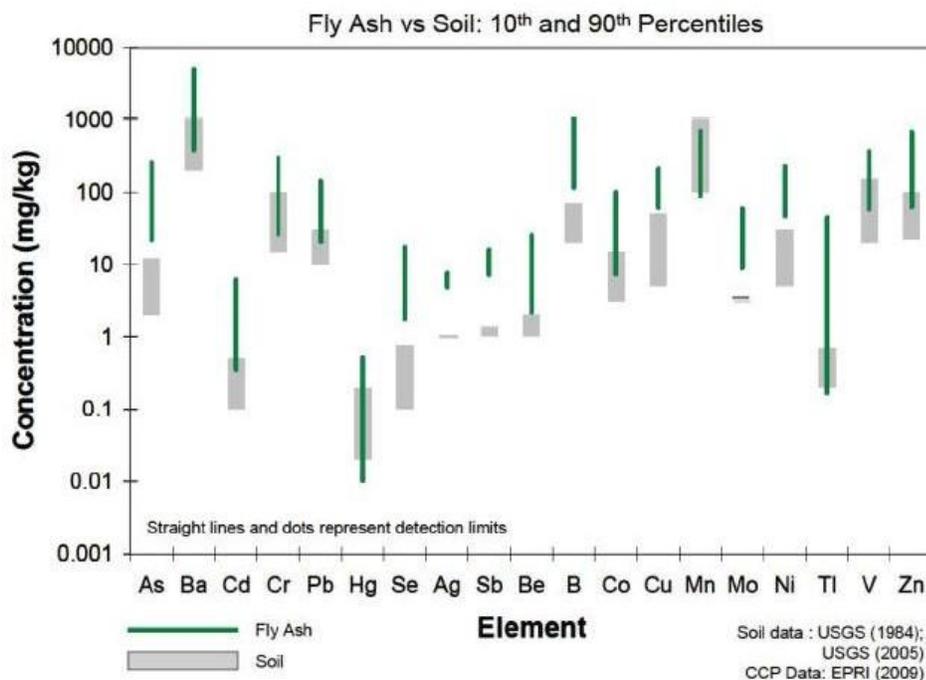
- **“Hazardous Waste” stigma already felt**
 - Consumers removing coal ash from specifications
 - Manufacturers of competing products advertising warnings of “toxic” and “hazardous waste”
 - Commercial liability insurance exclusions appearing
 - Standard setting organizations warning of exclusions
- **EPA wrongly claims “hazardous” designation will increase recycling**
 - Cites non-comparable products and industries
 - Relies on “increasing disposal cost” scenario that ignores historical cause for increases in recycling rate – particularly regulatory certainty as “non-hazardous” material

Where the Science Stands



- Coal ash does not qualify as hazardous waste based on its toxicity characteristics
- Kingston damage case related to engineering failure, not the material involved
- No damage cases related to beneficial use of coal ash
- Significant demonstrated beneficial use benefits
 - Environmental
 - Performance
 - Economic

Coal Ash Similar to Other Natural Materials



- As = Arsenic
- Ba = Barium
- Cd = Cadmium
- Cr = Chromium
- Pb = Lead
- Hg = Mercury
- Se = Selenium
- Ag = Silver
- Sb = Antimony
- Be = Beryllium
- B = Boron
- Co = Cobalt
- Cu = Copper
- Mn = Manganese
- Mo = Molybdenum
- Ni = Nickel
- Tl = Thallium
- V = Vanadium
- Zn = Zinc

Source

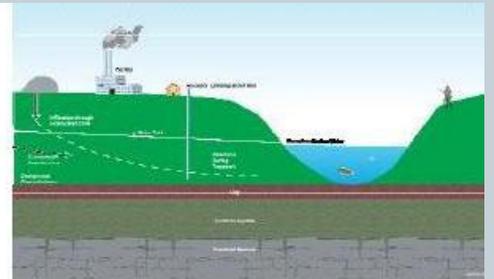
EPRI, 2010. Comparison of Coal Combustion Products to Other Common Materials – Chemical Characteristics. Report No. 1020556. Available for download at www.epri.com.

EPA Risk Model Routinely Mischaracterized

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– EPRI found:

- Only **74** of the 508 facilities, or **15%** had, apparent downgradient dwellings that could be using groundwater as drinking water
- Less than **3000** “dwellings” were identified
- Based on US Census data, this could be a population of less than **7770**



– EPA’s highest risk estimate is 2 in 100, or 1 in 50

- If all 7770 individuals lived downgradient of a surface impoundment, and used groundwater as drinking water then **155** could hypothetically develop cancer
- Based on the background cancer rate in the US, the cancer incidence in this population of 7770 would be 3,237 background cancer cases

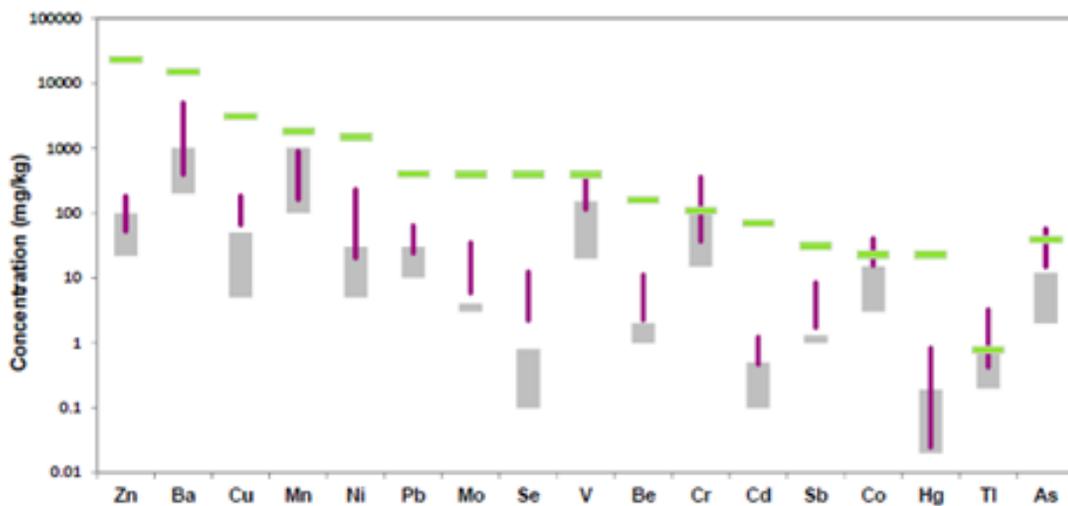
– The current US population is **307,006,550**

- Thus the cancer risk to “individuals who live near WMUs used for CCW disposal” is really **155 in 307,006,550** or **5 in ten million**, not 2 in 100

Ash Below Residential Risk Screening Levels



Comparison of 10th-90th percentiles in Fly Ash and Background Levels in US Soils to the USEPA RSLs for Residential Soils



RSLs: USEPA, May 2012. Values for residential soil. <http://www.epa.gov/region9/wmd/risk/human/risk-concentration-table/index.htm>
 Background Soils: EPRI, 2010, Report No. 1020568. Available for download at: www.epri.com
 Ash Data: USGS, 2011, Data Series 836. Available at: <http://pubs.usgs.gov/ds/836/>

Where the Political Science Stands

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Favor Subtitle C

Anti-Coal Environmental Groups

- EarthJustice
- Environmental Integrity Project
- Sierra Club
- Natural Resources Defense Council
- Appalachian Voices
- Public Employees for Environmental Responsibility

• Others

Oppose Subtitle C

Everybody Else

- Over Half of Congress
- Federal Agencies
- State Elected Officials
- State Agencies
- Utilities
- Ash Marketers and Users
- Materials Specifiers and Standards Writers
- Labor Unions

Subtitle C Opposition Reasons



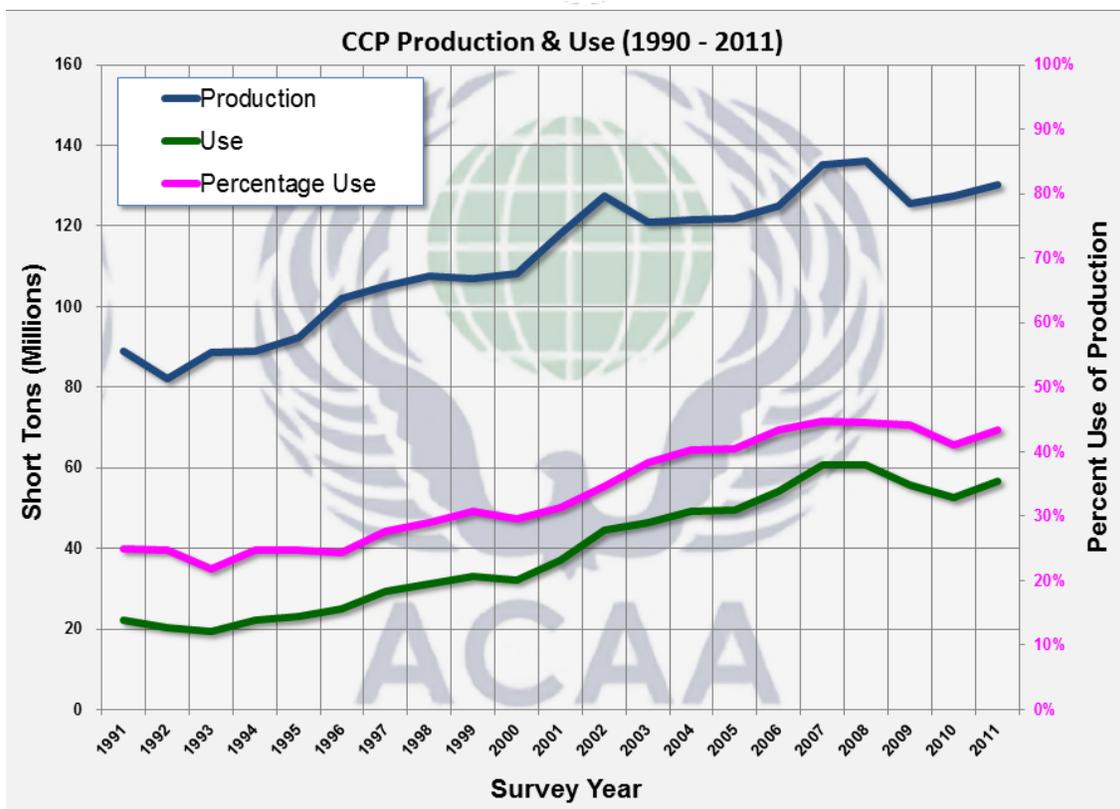
- Stigma and regulatory uncertainty damaging beneficial use as alternative to disposal
- Unwarranted cost of excessive regulation
- Federal interference with state regulatory programs and creation of unfunded mandates
- “Job killing” regulation
- Potential impacts on consumer electric rates and grid reliability
- Lack of scientific basis to overturn previous Regulatory Determinations

Regulatory Uncertainty Effects

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- 1990s – recycling rates in the 20s
- 2000 – recycling rate 29.7 percent
 - EPA Final Regulatory Determination that “hazardous waste” designation not warranted
 - Regulatory certainty creates incentive to invest in recycling
- 2002 – EPA starts Coal Combustion Products Partnership (C2P2) encouraging recycling over disposal
- 2008 – recycling rate 44.5 percent
 - EPA re-opens coal ash rulemaking with “hazardous” proposal
 - EPA later abolishes C2P2 program
- 2011 – recycling rate at 43.5 percent
 - Recycling volume 56.6 million tons – down from 60.6 million tons in 2008
- If past three years had simply remained equal with 2008’s utilization, 14.2 million tons less coal ash would have been disposed in landfills and impoundments

A Recycling Success Endangered



What Ash Users Talk About in DC

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- “Hazardous Waste” stigma and regulatory uncertainty already harming beneficial use
 - *Beneficial use rates have stalled*
 - Consumers removing coal ash from specifications
 - Manufacturers of competing products advertising warnings of “toxic” and “hazardous waste”
 - Commercial liability insurance exclusions appearing
 - Standard setting organizations warning of exclusions
- EPA wrongly claims “hazardous” designation will increase recycling
 - Cites non-comparable products and industries
 - Relies on “increasing disposal cost” scenario that ignores historical cause for increases in recycling rate – particularly regulatory certainty as “non-hazardous” material
- Coal ash is safe for beneficial use
 - Coal ash constituents similar to materials coal ash replaces when recycled

What a Long, Strange Trip It's Been

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- 2009 – Discussions with EPA, OMB and other agencies seeking to prevent Subtitle C proposal
- 2010 – Response to Draft Proposed Rule, including public hearings
- 2011 – Congressional hearings, introduction of HR 1391, response to first EPA NODA
- 2012 – HR 2273, S 3512, Transportation Bill, “Fiscal Cliff” Bill, ENGO deadline lawsuit, EPA Beneficial Use Risk Evaluation Methodology

Legislative History – Part One



- February 19, 2011: House votes 239-183 on temporary spending bill to block EPA funding for Subtitle C coal ash regulation
- April 6, 2011: Two bills filed to block Subtitle C coal ash regulation
 - HR 1391 (McKinley, R-WV) (60 bipartisan co-sponsors!)
 - HR 1405 (Latta, R-OH)
- April 14, 2011: Subcommittee on Environment and Economy hearing on HR 1391
- May 12, 2011: Small Business Subcommittee on Oversight, Investigations and Regulations hearing

Legislative History – Part Two



• June 21, 2011: Subcommittee on Environment and the Economy passes a substitute bill – **HR 2273, the “Coal Residuals Reuse and Management Act”**

• Would establish a non-hazardous coal ash disposal regulatory program led by states

• Minimum federal standards would be enacted and federal EPA would be allowed to step in if states do not comply

• July 13, 2011: Energy and Commerce Committee passes HR 2273 by 35-12 bipartisan vote after making additional changes based on Democratic member suggestions

• October 14, 2011: HR 2273 passes full House of Representatives 267-144 (including 37 Democrat votes – largest Democrat tally of any EPA-related bills this year)

• Only House EPA-related bill in 2011 that President Obama did not threaten to veto

Legislation Modeled After MSW Programs

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- Federal standards administered by states
- EPRI risk-based comparison of Municipal Solid Waste landfill leachate with coal ash leachate shows comparable health risks
- MSW risk drivers comprise over 30 potential carcinogens, versus 1 for coal ash (arsenic)
- MSW disposal facilities significantly more complex to manage:

	MSW	Coal Ash
Similar leachate toxicity?	X	X
Biologically active?	X	
Emits explosive gases?	X	
Emits greenhouse gases?	X	
Often contains sewage sludge?	X	
Attracts disease vectors? (Rodents, insects, scavengers)	X	

Legislative History – Senate Style



- **May 26, 2011: Letter to White House calling for quick resolution and elimination of Subtitle C option**
 - Sponsored by Sens. Kent Conrad (D-ND) and Mike Enzi (R-WY)
 - 32 Republicans and 12 Democrats signed
 - More Senators sent individual letters
- **October 20, 2011: S 1751 (a bill patterned after HR 2273) filed by 10 bipartisan co-sponsors**
 - Democrats Kent Conrad (ND), Mary Landrieu (LA), Joe Manchin (WV), Jay Rockefeller (WV), and Ben Nelson (NE)
 - Republicans John Hoeven (ND), Michael Enzi (WY), Rob Portman (OH), John Boozman (AR), and John Thune (SD)

Congressional Action Continued in 2012

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- House/Senate negotiations crafted revisions to HR 2273 designed to attract additional Democrat support
- Compromise coal ash language nearly included in Transportation Bill, but dropped at 11th hour after being linked to Senate demand for unrelated conservation funding
- Stand-alone bill with compromise language filed in Senate as S. 3512 with strong bipartisan support
- Senate bill language included in House-passed “End the War on Coal” bill

S 3512 Overview

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- S 3512 – Coal Ash Recycling and Oversight Act of 2012 – filed August 2, 2012
- Based on legislation that previously passed House, but adds key revisions designed to attract more Democratic support and address concerns of environmental groups
- **Strong bipartisan sponsorship**
 - Original Democrats: Kent Conrad (ND), Max Baucus (MT) Mary Landrieu (LA), Joe Manchin (WV), Mark Pryor (AR), Herbert Kohl (WI), Jim Webb and Mark Warner (VA), Claire McCaskill (MO), Ben Nelson (NE), Bill Nelson (FL), and Bob Casey (PA)
 - Original Republicans: John Hoeven (ND), Minority Leader Mitch McConnell (KY), Rob Portman (OH), John Boozman (AR), Roy Blunt (MO), Lamar Alexander (TN), Pat Toomey (PA), Lindsey Graham (SC), Jerry Moran (KS), Ron Johnson (WI), Orrin Hatch (UT), and John Thune (SD)
 - Later Additions: Jim Inhofe (R-OK) and Pat Roberts (R-KS)

Current Legislative Outlook - House

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- Rep. David McKinley planning to file “Coal Ash Recycling and Oversight Act of 2013” based on S 3512 language
- House subcommittee hearing April 1, 2013, positive on several counts
 - EPA signaled cooperative attitude toward bill
 - Democrat resistance muted compared to prior hearings
 - State regulators presented credible cases for state enforcement model
 - Beneficial use concerns prominently noted by witnesses and Congress members
- Bill may move to House floor for approval by late spring or summer

Legislative Outlook – Senate



- Loss of four S 3512 co-sponsors and increased Democrat majority presents need to develop additional support
- Senate likely to wait for movement in House prior to re-filing bill
- Senate legislation unlikely to move through committee process – more likely to be attached to other legislation as rider

Judicial Outlook

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- “Appalachian Voices vs. EPA” - 12 environmental groups sued EPA to force a schedule for completing coal ash regulations
- Ash marketers Headwaters Resources and Boral Material Technologies also filed separate lawsuits on same topic. USWAG & NMA intervened.
- Motions and briefs completed in December, 2012
- No settlement discussions conducted yet
- Judge canceled January Scheduling Conference with the parties, noting that outstanding motions for summary judgment may render it unnecessary
- Scheduling Conference subsequently rescheduled for April 26, 2013 – again delayed (this time to July 26)

EPA Disposal Rulemaking Outlook

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- October 11, 2012, declaration by EPA ORCR Director Suzanne Rudzinski in Appalachian Voices case:
 - “A six-month schedule fails to allow sufficient time for EPA to publish a NODA and take into account comment on data EPA has received since the close of the comment period, that is both highly relevant to the CCR rulemaking, and has the potential to significantly affect EPA’s decisions.”
- In addition to forthcoming NODA, paragraph 49 lists rulemaking tasks yet to be completed
- Declaration also notes need for eventual OMB review
- January media interview with Assistant Administrator Mathy Stanislaus and his April Congressional testimony reiterated back burner schedule
- As of May 14, 2013, next NODA remains unpublished
- Administrator nominee Gina McCarthy is so far silent on coal ash during confirmation process

EPA Outlook – Other Rulemakings

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- Other rulemakings may eclipse the coal ash RCRA proceeding:
 - Office of Surface Mining Rulemaking on Mine Placement
 - Draft Proposed Rule expected sometime during 2013
 - Likely similar to proposal first floated in 2008
 - Steam Generating Effluent Guidelines
 - Clean Water Act proceeding (would have been primary focus to increase impoundment regulations absent Kingston)
 - ENGOs earlier consented to delay (in hopes of a RCRA Subtitle C and/or better prospects in a second Obama term)
 - Data gathered in this proceeding will form basis of NODA in the RCRA proceeding

ELG Rulemaking Update



- Draft proposed rule announced April 19, 2013
- Four regulatory “options” for public comment
- 60-day public comment period to follow publication in Federal Register
- EPA under consent decree to take final action by May 22, 2014
- EPA stated intent to “align this Clean Water Act rule with a related rule for coal combustion residuals (CCRs, also known as “coal ash”) proposed in 2010 under the Resource Conservation and Recovery Act.”

ELG Statement on the CCR Rule

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- ***“Although a final risk assessment for the CCR rule has not yet been completed, reliance on the data and analyses discussed above may have the potential to lower the CCR rule risk assessment results by as much as an order of magnitude. If this proves to be the case, EPA’s current thinking is that, the revised risks, coupled with the ELG requirements that the Agency may promulgate, and the increased Federal oversight such requirements could achieve, could provide strong support for a conclusion that regulation of CCR disposal under RCRA Subtitle D would be adequate.”***

Question: Is That Statement Enough?

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- *“Although a final risk assessment for the CCR rule has not yet been completed, reliance on the data and analyses discussed above **may** have the **potential** to lower the CCR rule risk assessment results by as much as an order of magnitude. **If** this proves to be the case, EPA’s **current thinking is** that, the revised risks, coupled with the ELG requirements that the Agency **may** promulgate, and the increased Federal oversight such requirements **could** achieve, **could** provide strong support for a conclusion that regulation of CCR disposal under RCRA Subtitle D would be adequate.”*

EPA Beneficial Use Risk Evaluations

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- 2010 EPA Office of Inspector General report concludes EPA should evaluate risks before endorsing beneficial use
- Agency subsequently commits to development of risk “evaluation” methodologies by:
 - April 2012 – Methodology for encapsulated uses
 - Fall 2012 – Large scale structural fill guidance for rulemaking
 - 2nd Quarter 2014 – Methodology for unencapsulated uses
- Two months late for Agency’s self imposed deadline, EPA opened discussions with stakeholders the methodology for encapsulated use
 - Sequential five-step methodology
 - EPA likely to apply to concrete and wallboard only
 - Tool” available to anyone for evaluating other uses
- ACAA staked wary position initially
 - Expressed concern over stigma at having coal ash singled out for scrutiny
 - Questioned need for methodology if EPA will not actively promote

Risk Evaluation Progress

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- EPA withdrew plan to release methodology on its own, but moved forward with its application to fly ash concrete and synthetic gypsum wallboard
- Initial signals appear positive:
 - **“The Impact of Coal Combustion Fly Ash Used as a Supplemental Cementitious Material on the Leaching of Constituents from Cements and Concretes”** H.A. van der Sloot, D.S. Kosson, A.C. Garrabrants and J. Arnold, EPA/600/R-12/704, U.S. Environmental Protection Agency, Air Pollution and Control Division, October 2012.
- Report is now moving to internal peer review. Earliest likely release would be fall 2013

Risk Evaluations Outlook

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- ACAA meeting March 18, 2013, with EPA Director of Office of Solid Waste and Emergency Response
- EPA confirmed:
 - Methodology for encapsulated uses complete including internal and external peer review
 - Pursuant to opinions of ACAA and others, methodology will not be publically released until applied once by EPA
 - EPA evaluation of fly ash concrete and synthetic gypsum wallboard is complete and entering internal peer review. (External peer review will not be conducted)
 - Release of methodology and its first use may occur by fall of 2013
 - Evaluation only covers “in place” application – does not consider life cycle or end of life considerations
 - Unencapsulated methodology may be “conceptual framework”

So What Is The Future?



What Will the New Sheriff Do?

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- EPA Administrator nominee Gina McCarthy currently serves as EPA assistant administrator for the Office of Air and Radiation
- Extensive experience as environmental adviser and regulator in Massachusetts and Connecticut
- Likely not as vested in seeking a harsh coal ash regulatory regime as her predecessor



ENGOS Facing Conundrum

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- Open coal ash proceeding providing potent tool for anti-coal publicity and fundraising; however...
- Lack of tangible progress is beginning to wear thin
 - “What we have right now throughout the United States is a patchwork of inadequate regulations with no federal requirements for consistent minimum standards. While we would prefer that the agency regulate under Subtitle C, the rule under Subtitle D would be an improvement on what we have now. But clearly the status quo leaves communities unprotected.” – Lisa Evans, Earthjustice, quoted on WFPL News, January 18, 2012

A Few Things Are Certain (Probably)

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- Under every scenario, disposal requirements will increase
 - “Wet to dry” disposal conversions will increase
 - Markets for disposal services will increase
- Coal ash marketing segment *could* benefit if “hazardous waste” stigma is avoided
 - “Encapsulated” beneficial uses most likely to be favored
 - “Wet to dry” disposal conversions could present new sources of ash supply
- Overcoming waste stigma has re-emerged as a priority issue for the ash beneficial use industry
- ENGOs increasingly shifting focus away from stalled regulatory options and toward site by site litigation

Here's What I Know For Sure...



- The only certainty for U.S. energy policy is continued uncertainty
- The only science that matters in Washington is political science
- Enactment of environmental regulations is a primary driver of fossil energy technology adoption
- Development of environmental regulations is a long term affair
- Incremental regulations are far more likely than the landmark kind
- Americans do love their energy
- Coal is going to be around for a while

Helpful Stuff You Can Look Up



- **American Coal Ash Association**
 - <http://coalashfacts.org/>
- **Citizens for Recycling First**
 - <http://www.recyclingfirst.org/>
- **Utility Solid Waste Activities Group**
 - <http://www.uswag.org/ccbc.htm>
- **Veritas Jobs Impact Study**
 - http://www.uswag.org/pdf/2011/FinalCCRNJobImpacts_June2011.pdf
- **ARTBA Roads & Bridges Impact Study**
 - <http://www.artba.org/mediafiles/study2011flyash.pdf>
- **ACAA Material Safety Study**
 - http://aca-usa.org/associations/8003/files/Coal_Ash_Material_Safety_Study_Overview_2012-06-06.pdf
- **EPRI Technical Reports**
 - www.epri.com
 - Comparison of Coal Combustion Products to Other Common Materials – Chemical Characteristics. Technical Report 1020556
 - Comparison of Risks for Leachate from Coal Combustion Product Landfills and Impoundments with Risks for Leachate from Subtitle D Municipal Solid Waste Landfill Facilities. Technical Report 1020555

About John Ward



- **More than 20 years energy industry experience**
- Former Vice President, Marketing & Government Affairs, Headwaters Inc.
- Former Senior Vice President, Communications & Marketing, EnergySolutions Inc.
- Former Director and Past President, American Coal Council
- Former Member, National Coal Council (as appointed by U.S. Secretary of Energy)
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