REINHOLD ENVIRONMENTAL Ltd.

2012 APC Round Table
& Expo Presentation

July 16-17, 2012, in Baltimore, MD / Hosted by Duke Energy, Entergy, FirstEnergy, Southern Company & TVA

Mercury Air Toxic Standards (MATS) and New Regulations Update

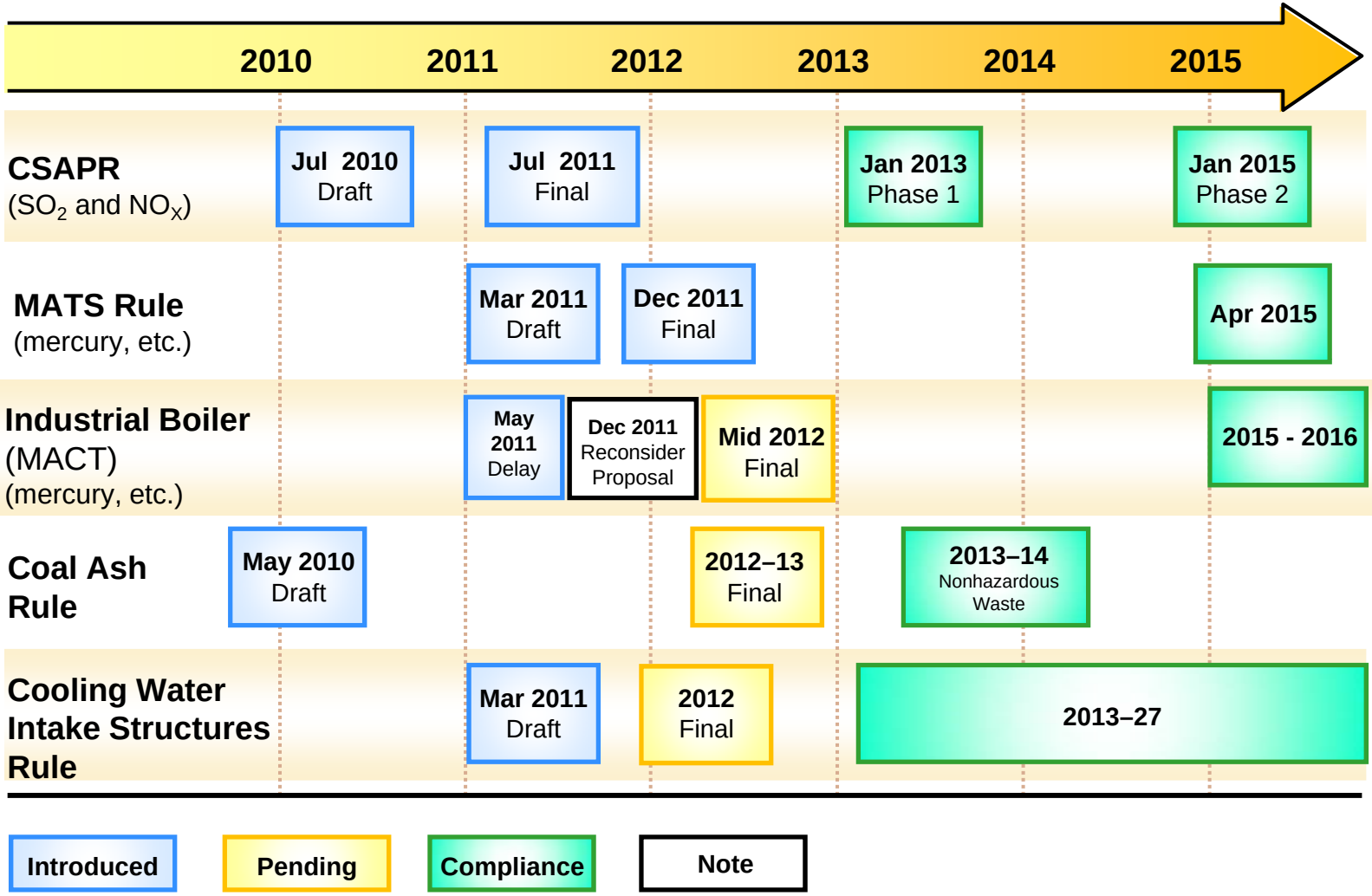
Reinhold Environmental APC Conference

Baltimore, MD

July 16, 2012

Brad Moulton, PE – Foster Wheeler North America

EPA Rules Timeline



SOx and NOx Regulation
- The Cross State Air Pollution Rule (CSAPR)

- The Death of the Clean Air Interstate Rule (CAIR)
  - In place since 2005 allowing 31 eastern states to freely trade SOx and NOx allowance credits
  - Invalidated by DC district court in 2008 due to disconnect with state national ambient air quality standards (NAAQS)
- The Birth of the Cross State Air pollution Rule (CASPR)
  - Requires substantial reductions of SO2 and NOx emissions from power plants through a modified cap-and-trade in 28 eastern states in 2 phases (2012 – 2014 and 2015 – 2018)
    - By 2014, the program imposes a SO2 cap of 3.36 m tons, and a NOx cap of 1.95 m tons per year which is 67% and 46% below 2005 levels, respectively – similar to the CAIR program.
    - On December 16, 2011, EPA finalized the CSAPR program which was to take effect January 1, 2012.
    - On December 30, 2011, the United States Court of Appeals for the D.C. Circuit issued a ruling to stay CSAPR pending judicial review which will occur in April 2012, effectively bringing new uncertainty about the rule's implementation in context and schedule.
    - Decision to hold/release stay or vacate rule expected summer 2012
    - In the meantime, CAIR remains in effect.

States Covered by the Cross State Air Pollution Rule - Current Timeline

January 1, 2012: Cross-State Air Pollution Rule Phase 1 SO2 and annual NOX trading programs begin.

- Sources must demonstrate compliance by March 1, 2013.

May 1, 2012: Cross-State Air Pollution Rule ozone season NOX trading program begins.

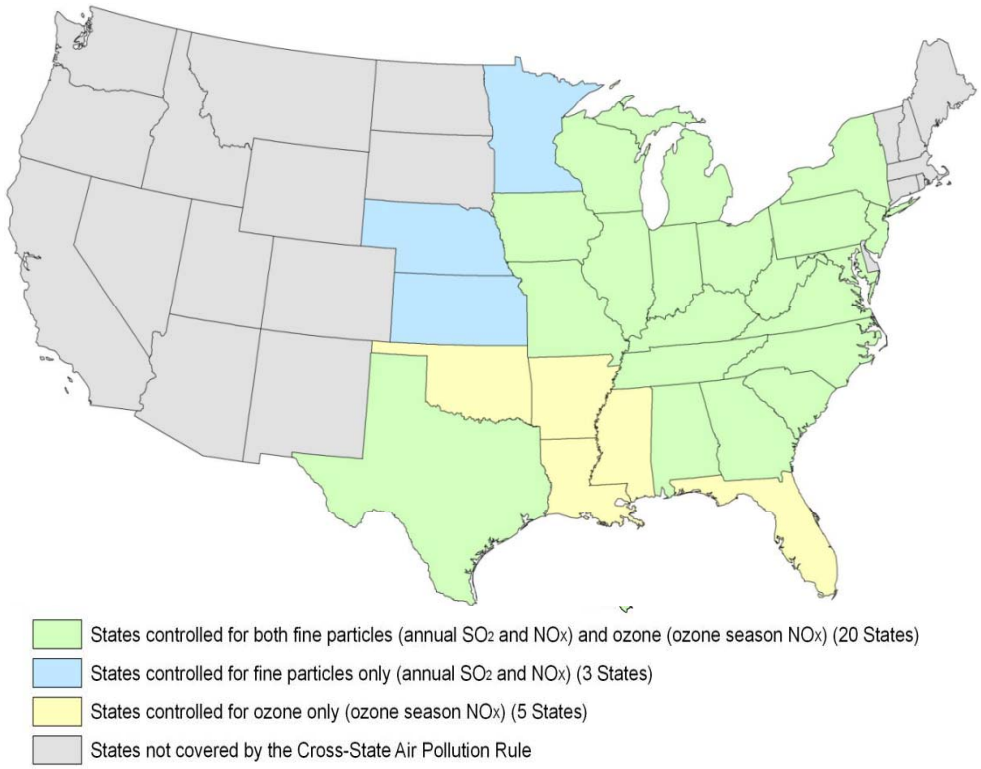
- Sources must demonstrate compliance by December 1, 2012.
- Ozone season ends September 30.

January 1, 2014: Phase 2 SO2 and annual NOX trading programs begin.

- Sources must demonstrate compliance by March 1, 2015.

May 1, 2014: Cross-State Air Pollution Rule Phase 2 ozone season NOX trading program begins.

- Sources must demonstrate compliance by December 1, 2014.



Regional Haze Rule/Clean Air Visibility Rule

- Drives reductions in SOx, NOx, PM from power plants in all states to improve visibility in 156 national parks and wilderness areas
- States must include Best Available Retrofit Technology (BART) in their plan for certain sources that emit pollutants and impair visibility
  - Applies only to units existing between 1962-1977
  - BART is flexible and considers four factors (cost, time, Energy, unit life impact)
- Most states have submitted State Implementation Plans (SIPs) which were due end of 2011
- 18 states have been given a limited disapproval and Federal Implementation Plans (FIPs) have been imposed
- On December 23, 2011, the EPA issued a proposal to allow the trading program in CSAPR as an alternative to determining BART.

States with Imposed FIP Plans

Mercury and Air Toxics Standards Rule (MATS) - Formally Utility MACT

- On December 21, 2011 the EPA released the final version of the Mercury and Air Toxics Standards Rule (MATS)
  - Under section 112 of the CAA requiring a maximum achievable control technology (MACT) standard for hazardous air pollutants (HAPs)
  - Applies to all electric generating units 25 MWe or larger that burn coal or oil
  - The rule identifies two subcategories of coal-fired units, four subcategories of oil fired units and a subcategory for units that combust gasified coal or solid oil (IGCC)
  - For coal-fired units, numerical emission limits for measurable HAPs are established for mercury, PM (a surrogate for non-mercury metals), and HCl (a surrogate for all acid gases)
- MACT standard establishes emission limits based on:
  - For existing units: emission limit is based on average emission achieved by the best performing 12% of existing sources
  - For new units: emission limit is based on best controlled “similar” source
- MACT Standard will likely require the following equipment
  - ACI + Baghouse for Hg and PM
  - FGD for HCl
  - Combustion Improvement for CO
- Legal challenges not expected due to long compliance period

The 189 Compounds which EPA has Defined as Hazardous Air Pollutants (HAP)

Acetaldehyde, Acetamide, Acetonitrile, Acetophenone, 2-Acetylaminofluorene, Acrolein, Acrylamide, Acrylic acid, Acrylonitrile, Allyl chloride, 4-Aminobiphenyl, Aniline, o-Anisidine, Asbestos, Benzene (including benzene from gasoline), Benzidine, Benzotrichloride, Benzyl chloride, Biphenyl, Bis(2-ethylhexyl)phthalate (DEHP), Bis(chloromethyl)ether, Bromoform, 1,3-Butadiene, Calcium cyanamide, Caprolactam(See Modification), Captan, Carbaryl, Carbon disulfide, Carbon tetrachloride, Carbonyl sulfide, Catechol, Chloramben, Chlordane, Chlorine, Chloroacetic acid, 2-Chloroacetophenone, Chlorobenzene, Chlorobenzilate, Chloroform, Chloromethyl methyl ether, Chloroprene, Cresols/Cresylic acid (isomers and mixture), o-Cresol, m-Cresol, p-Cresol, Cumene, 2,4-D, salts and esters, DDE, Diazomethane, Dibenzofurans, 1,2-Dibromo-3-chloropropane, Dibutylphthalate, 1,4-Dichlorobenzene(p), 3,3-Dichlorobenzidene, Dichloroethyl ether (Bis(2-chloroethyl)ether), 1,3-Dichloropropene, Dichlorvos, Diethanolamine, N,N-Diethyl aniline (N,N-Dimethylaniline), Diethyl sulfate, 3,3-Dimethoxybenzidine, Dimethyl aminoazobenzene, 3,3'-Dimethyl benzidine, Dimethyl carbamoyl chloride, Dimethyl formamide, 1,1-Dimethyl hydrazine, Dimethyl phthalate, Dimethyl sulfate, 4,6-Dinitro-o-cresol, and salts, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 1,4-Dioxane (1,4-Diethyleneoxide), 1,2-Diphenylhydrazine, Epichlorohydrin (l-Chloro-2,3-epoxypropane), 1,2-Epoxybutane, Ethyl acrylate, Ethyl benzene, Ethyl carbamate (Urethane), Ethyl chloride (Chloroethane), Ethylene dibromide (Dibromoethane), Ethylene dichloride (1,2-Dichloroethane), Ethylene glycol, Ethylene imine (Aziridine), Ethylene oxide, Ethylene thiourea, Ethylidene dichloride (1,1-Dichloroethane), Formaldehyde, Heptachlor, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachloroethane, Hexamethylene-1,6-diisocyanate, Hexamethylphosphoramide, Hexane, Hydrazine, Hydrochloric acid, Hydrogen fluoride (Hydrofluoric acid), Hydrogen sulfide (See Modification), Hydroquinone, Isophorone, Lindane (all isomers), Maleic anhydride, Methanol, Methoxychlor, Methyl bromide (Bromomethane), Methyl chloride (Chloromethane), Methyl chloroform (1,1,1-Trichloroethane), Methyl ethyl ketone (2-Butanone)(See Modification), Methyl hydrazine, Methyl iodide (Iodomethane), Methyl isobutyl ketone (Hexone), Methyl isocyanate, Methyl methacrylate, Methyl tert butyl ether, 4,4-Methylene bis(2-chloroaniline), Methylene chloride (Dichloromethane), Methylene diphenyl diisocyanate (MDI), 4,4'¬-Methylenedianiline, Naphthalene, Nitrobenzene, 4-Nitrobiphenyl, 4-Nitrophenol, 2-Nitropropane, N-Nitroso-N-methylurea, N-Nitrosodimethylamine, N-Nitrosomorpholine, Parathion, Pentachloronitrobenzene (Quintobenzene), Pentachlorophenol, Phenol, p-Phenylenediamine, Phosgene, Phosphine, Phosphorus, Phthalic anhydride, Polychlorinated biphenyls (Aroclors), 1,3-Propane sultone, beta-Propiolactone, Propionaldehyde, Propoxur (Baygon), Propylene dichloride (1,2-Dichloropropane), Propylene oxide, 1,2-Propylenimine (2-Methyl aziridine), Quinoline, Quinone, Styrene, Styrene oxide, 2,3,7,8-Tetrachlorodibenzo-p-dioxin, 1,1,2,2-Tetrachloroethane, Tetrachloroethylene (Perchloroethylene), Titanium tetrachloride, Toluene, 2,4-Toluene diamine, 2,4-Toluene diisocyanate, o-Toluidine, Toxaphene (chlorinated camphene), 1,2,4-Trichlorobenzene, 1,1,2-Trichloroethane, Trichloroethylene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, Triethylamine, Trifluralin, 2,2,4-Trimethylpentane, Vinyl acetate, Vinyl bromide, Vinyl chloride, Vinylidene chloride (1,1-Dichloroethylene), Xylenes (isomers and mixture), o-Xylenes, m-Xylenes, p-Xylenes, Antimony Compounds, Arsenic Compounds (inorganic including arsine), Beryllium Compounds, Cadmium Compounds, Chromium Compounds, Cobalt Compounds, Coke Oven Emissions, Cyanide Compounds1, Glycol ethers2, Lead Compounds, Manganese Compounds, Mercury Compounds, Fine mineral fibers3, Nickel Compounds, Polycylic Organic Matter4, Radionuclides (including radon)5, Selenium Compounds

Mercury and Air Toxics Standards Rule (MATS) - Coal-Fired Unit Emission Limits

Category	Existing Unit		New or Reconstructed[2] Unit		Measurement Method (EPA or Otherwise)
	Unit designed for low rank virgin coal[1]	Not low rank virgin coal	Unit designed for low rank virgin coal[1]	Not low rank virgin coal	
Filterable Particulate Matter (PM)	0.03 lb/mbtu	0.03 lb/mbtu	0.007 lb/MWh	0.007 lb/MWh	Method 5 or PM CEMS
Total or individual non-Hg metals	Filterable PM (above) is considered a surrogate				Method 29
Hydrogen Chloride (HCl)	0.002 lb/mbtu	0.002 lb/mbtu	0.0004 lb/MWh	0.0004 lb/MWh	Methods 26, 26A or HCl/HF CEMS
Mercury	0.000004 lb/mbtu	0.0000012 lb/mbtu	0.00004 lb/MWh	0.0000002 lb/MWh	Method 30B or Hg CEMS
Sulfur Dioxide[3]	0.2 lb/mbtu	0.2 lb/mbtu	0.4 lb/MWh	0.4 lb/MWh	(SO2) SO2 CEMS

Note 1. EPA defines a unit burning low rank virgin coal as a unit burning non-agglomerating virgin coal having a calorific value (moisture, ash free basis) of less than 19,305 kJ/kg (8,300 Btu/lb) and that is constructed and operates at or near the mine that produces such coal , 2. Reconstructed units are defined as having undergone upgrade or refurbishment work totally over 50% of the cost of a new unit. 3. If unit has a FGD and CEMS, then HCl limit can be met instead by SO2 surrogate limit of 0.2 lb/mbtu (Existing) or 0.4 lb/MWh (New unit).

Mercury and Air Toxics Standards Rule (MATS) - Coal-Fired EGUs Compliance Timing

- New sources
  - Published in the Federal Register in January 2012
  - PLUS 60 days or upon startup, whichever is later
- Existing Sources
  - Published in the Federal Register on February 16, 2012
  - PLUS 60 days (April 16, 2012)
  - PLUS three years (April 16, 2015)
- One-Year Extension can be granted by state permitting authority when:
  - unit will not be retired and extension necessary for the installation of controls on-site
  - unit will retire, but extension necessary for the construction of replacement power on-site
  - unit will retire, but extension necessary for:
    - the installation of controls off-site
    - construction of replacement power offsite
    - or construction of additional transmission AND serious risk to electric reliability exists
- One-Year Administrative Order
  - EPA issued a enforcement policy memo indicating a “5th year” will be available for “reliability critical” units

Mercury and Air Toxics Standards Rule (MATS) - NSPS Limits

- More stringent PM, SO2, NOx limits for new/reconstructed units
  - PM: 0.09 lb/MWh
  - SO2: 1.0 lb/MWh
  - NOx: 0.7 lb/MWh
  - Tighter than current levels but still doable
  - For Supercritical coal plant burning average US coal these values translate to:
    - PM: 0.009 lb/mbtu or 10 mg/Nm3
    - SO2: 0.12 lb/mbtu or 128 mg/Nm3
    - NOx: 0.8 lb/mbtu or 100 mg/Nm3
- NOx limit tightened to 1.1 lb/MWh for modified units
- New COMBINED alternative NOx and carbon monoxide (CO) limit

The Industrial Boiler MACT Rule - Outlook and Impact

- Targets major sources facilities and will Impact:
  - 13.5K boilers and process heaters at 1600 industrial facilities
  - Some universities, municipalities, and military installations
  - All types of boilers and heaters: coal, biomass, gas and liquid fueled except incinerators (CAA 129)
  - Major sources defined as producing over 10 tpy of any single HAP or 25 tpy for all HAPs
- Set emissions limits and MACT standard for boilers over 10 Mbtu/hr (1 MWe) heat input
  - Sets emission limit and MACT standard for 4 HAPs or surrogates: Hg, CO, HCl, PM
  - Annual compliance testing for all pollutants with annual unit tune-ups
  - CEMs for CO, PM (units over 250 Mbtu/hr (25 MWe)) with 30 day rolling average compliance
  - Establishes MACT standards: ACI+Baghouse for Hg, FGD for HCl, Combustion for CO and PM
  - Natural gas and units under 10 Mbtu/hr require only work practice standard and annual tune-ups
- On Dec. 2, 2011, EPA proposed more reasonable final revised rule replacing dioxin limits with work practice, revising PM and CO limits, exempting biomass plants from PM CEMS
- On Jan 9, 2012, DC District Court vacates EPA's stay making the rule effective on this day
- EPA responded by issuing guidance document indicating it will not enforce rule
- EPA promised a final rule in May 2012We are awaiting for a response from EPA, industry, and politicians

Industrial Boiler MACT Re-Proposed Emission Limits - Existing Units

Fuel Subcategory	Boiler Subcategory	HCl, lb/mbtu	Hg, lb/TBtu	PM, lb/mbtu	TSM, lb/mbtu	CO 3 day avg / 10-day rol avg. (ppmvd @ 3%O2) (Note 4)
Coal/Solid Fossil Fuel	Stoker	0.022	3.1	0.028	8.3×10^{-5}	220/34
	Fluidized Bed			0.088	1.7×10^{-5}	56/59
	Pulverized Coal			0.044	5.9×10^{-5}	41/28
Biomass/ Bio-Based Solid	Stoker/Sloped Grate Wet Biomass	0.022	3.1	0.029	5.7×10^{-5}	790/410
	Stoker/Sloped Grate Kiln-Dried Biomass			0.32	4.0×10^{-3}	250/NA
	Fluidized Bed			0.11	1.2×10^{-3}	370/180
	Suspension Burners			0.051	1.1×10^{-3}	1,400/58
	Dutch Ovens/Pile Burners			0.036	2.4×10^{-4}	810/440
	Fuel Cell			0.033	4.9×10^{-5}	1,500/NA
	Hybrid Suspension Grate			0.44	4.9×10^{-4}	3,900/730

(1) The emissions limits apply to boilers with a heat input capacity of 10 MMBtu/hr or greater. Limited use boilers are not subject to the emission limits.
(2) The rule also establishes alternative output based emission limits (not shown) for each of the emission limits in this table.
(3) Emission limits must be met at all times except for start-up/shutdown periods during which emissions must be minimized.
(4) The CO emission limit has an alternative 10-day rolling average (as demonstrated by a CO continuous emissions monitors system) emission limit for each CO emission limit.

Industrial Boiler MACT Re-Proposed Emission Limits - New Biomass Units

- PM
  - Stokers = 0.029 lb/mbtu
  - BFB = 0.0098 lb/mbtu
- HCl
  - All boiler types = 0.022 lb/mbtu
- CO
  - Stokers = 590 ppm / 410 ppm
- Existing boilers become new if “reconstructed”
  - Over 50% of the cost of a comparable new source
  - Technically and economically feasible to meet standards
- CO for existing coal = 160 ppm → 41 / 28 ppm

Cooling Water Intake Rule

- On March 8 2011, EPA proposed regulations under Section 316(b) of the CWA that set national standards for cooling water intakes to protect fish and aquatic organisms
- In response to comments, EPA is extending the comment period and is expected to issue the final rule by July 2012
- Industry feared that EPA would require costly cooling water towers, but EPA's proposed rule surprised everyone by giving states and utilities options for reducing impingement and minimizing entrainment of fish and aquatic organisms
  - Impingement options: (1) reduce water intake velocity to <0.5 feet/second, or (2) monitoring that demonstrates that performance standards are being met
  - Entrainment options: (1) Facilities that withdraw > 2 million gallons of water per day require site-specific controls based on local circumstances (2). Facilities that withdraw >125 million gallons per day must also conduct a study and establish a process for receiving public input on the controls
  - New units at existing facilities must use closed-cycle cooling towers
- Ultimately states that have authority to issue NPDES permits will determine the best technology for meeting the regulations
- For states that don't have authority to issue NPDES permits, EPA will determine the technology

US Boiler Ash Rule

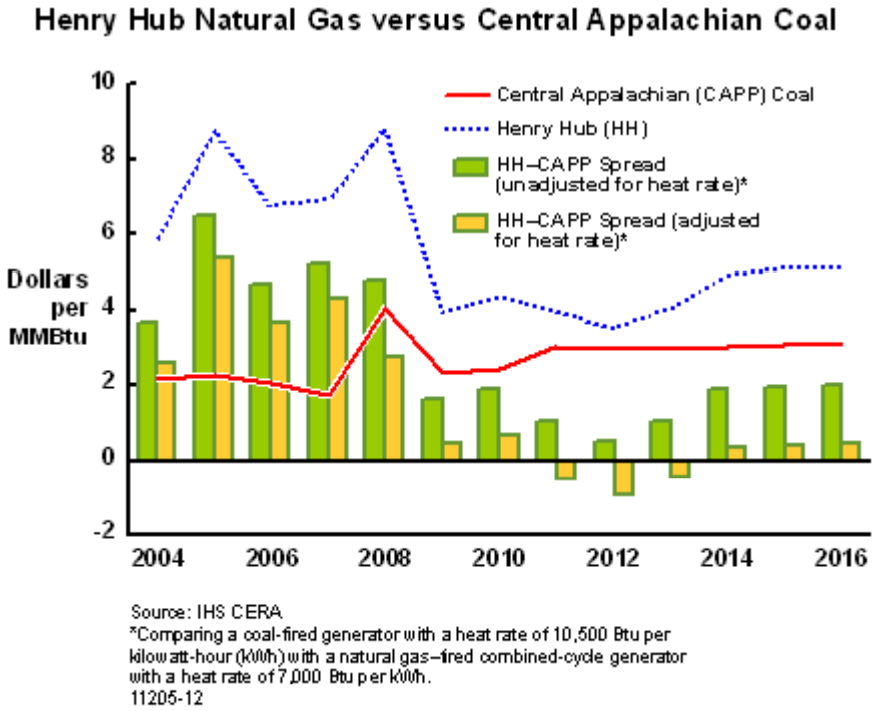
- On May 4, 2010, the US EPA released its draft proposal for public comment to regulate coal ash offering two alternative approaches
  - Regulate coal boiler ash as hazardous waste (subtitle C) or
  - As non-hazardous (subtitle D) and treat it like municipal solid waste.
  - Depending on which option is ultimately selected, the ash rule could affect nearly 600 surface impoundments or ash ponds, 300 landfills, and a multibillion-dollar-per-year ash recycling industry
- We see a major threat to utilities, the economy and the environment if coal ash receives the hazardous waste label
  - A hazardous waste label will likely kill the market for recycling ash into road aggregate and cement
  - About 60 mtons (44% of total 136 mtons) per year of coal ash is recycled in the US
- Due to pressure, EPA reopened rule to public comment. Don't expect EPA to finalize rule until after 2012 Presidential elections
  - Significant opposition from industry and utilities with EPA receiving over 450,000 comments during the public comment period
  - Bills floating in congress to block EPA's ability to classify boiler ash as hazardous waste

Tailoring Rule and GHG NSPS
- The Bumpy Road to US CO2 Regulation Continues

- Since Jan 2, 2011, EPA's tailoring rule sets thresholds for when PSD (Prevention of Significant Deterioration) and Title V operating permits will require GHG BACT standard
  - All new sources with GHG emissions over 100 ktpy CO2e (15 MWe) or modified sources with over 75 ktpy CO2e must comply to a BACT standard for GHGs in PSDs and Title 5 permits, the CO2 threshold then decreases to 50 ktpy beginning in July 1, 2013
  - Beginning on Sept, 30, 2011, these units must report their GHG emissions to EPA
- EPA released proposed CO2 NSPS on March 27, 2011
  - Just for one GHG (CO2) and only for new power plants over 25 MWe
  - CO2 NSPS = 1000 lb/MWh based on NGCC plant, supercritical c coal plant about 1900 lb/MWh
  - Alternative 30 year average option: 1800 lb/MWh for 1st 10 yrs then 600 for next 20 yrs (CCS needed)
  - Projects with PSD in hand on March 27 and start construction within 12 months are exempt
  - Plant modifications will not trigger CO2 NSPS, except AQCS retrofits still open for discussion
  - Once final, States required to perform GHG BACT determination using CO2 NSPS as floor
- Expect continued bumpy road for US GHG regulation
  - The state of Texas is challenging EPA 's authority to regulate GHGs resulting in EPA taking authority from Texas to grant PSD and Title V permits. The case is still pending.

What Impact do we see from these rules on the US Power Industry?

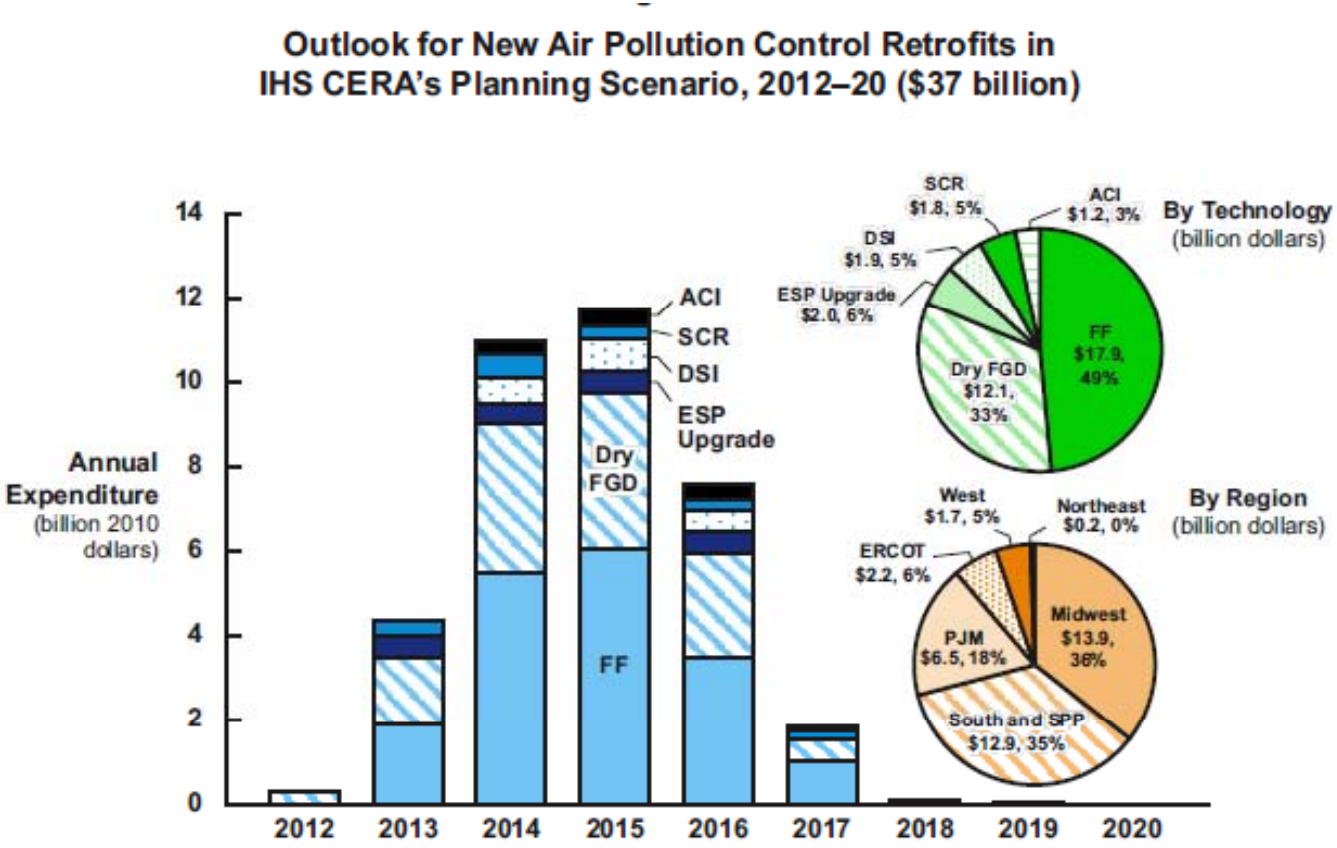
- All EPA environmental final rules for conventional pollutants have been tempered from the initial proposal and US Regulatory uncertainty will likely continue for at least the next year or two
  - Past the November 2012 elections
  - Constraining investment in both existing and new power and industrial facilities. Especially those utilizing coal and biomass fuels .
- Low gas prices will likely drive more coal plant retirements and less coal plant upgrades
  - Coal plants smaller than 300 MWe and older than 40 years will likely be the first to go
  - Replacing coal plants with gas plants is attractive from both an economical and regulatory risk aspect
- We expect to see a growing market for dry scrubbers at the expense of the wet scrubbers
  - Dry scrubber cost less, use less water and capture metals and acid gases more effectively than wet systems
- We expect to see a growing market for activated carbon/lime/trona injection systems and bag houses



Retrofit AQCS FGD Market Outlook for the US - Utility and Industrial Coal Plants

- A number of new EPA Rules are expected to drive a AQCS retrofit market beginning in 2012
  - Cross State Air Pollution Rule will require further SOx and NOx reductions from utility coal plants and expected to drive new wave of FGD and SCR retrofits in the eastern US
  - Regional Haze and Visibility Rule will require further SOx and NOx reductions from utility coal plants and expected to drive new wave of FGD and SCR retrofits in the western US
  - MATS Rule will likely drive ACI + Baghouse retrofits on most coal utility power plants across the US
  - Boiler MACT Rule will likely require dry scrubbers + ACI + Baghouse retrofits on the majority of industrial coal and biomass units across the US
- We forecast about $40B investment into AQCS retrofits and upgrades out to 2017 by both US utilities and industrial facilities
  - Retrofit FGD : 18 GWe ($8B) Wet , 39 GWe ($14B) Dry, and 31 GWe ($1B) DSI systems
  - Retrofit SCR : 11 GWe ($2B)
  - New ACI Systems : 112 GWe ($1B)
  - New Fabric Filters : 90 GWe ($14B) and ESP Upgrades : 34 GWe ($0.2B)

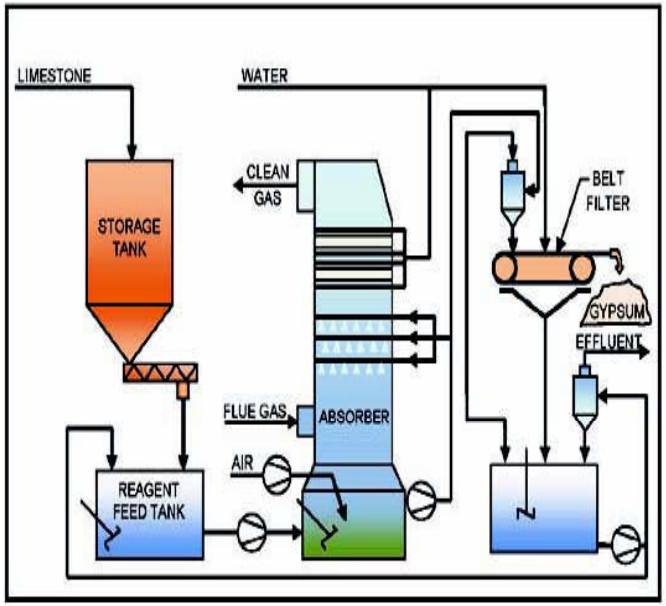
Retrofit FGD Market Outlook for the US - Utility Coal Plants



Source: IHS CERA retrofit or retire market brief, April 2012

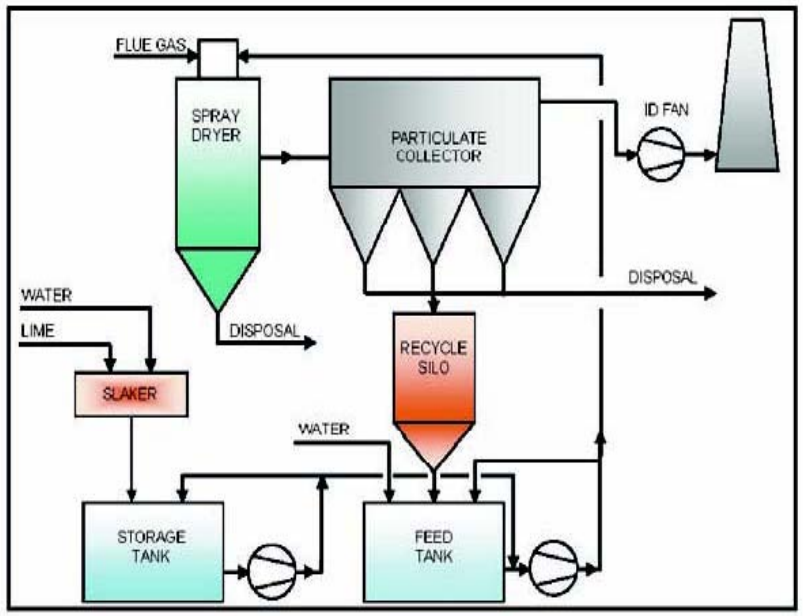
Wet FGD Technology Summary - Fit to Market

- Pros
  - Predominant FGD technology for large utility installations
  - Utilizes low cost limestone
  - Waste slurry can be refined into Gypsum for use as cement additives or wallboard.
  - Can handle fuels with over 3% sulfur
  - SO2 capture up to 99% with outlet SOx levels down to 0.04lb/mbtu
  - Single trains proven up to 1000 MWe
- Cons
  - SO3 capture typically less than 60% requiring downstream wet ESP in US applications
  - Not effective in capturing other acid gases and metals
  - Requires 30-40% more water than the dry systems
  - Large footprint can limit retrofit application
  - 2x capital cost than dry systems
  - Alloy steel and/or plastic linings required for vessel and ducting



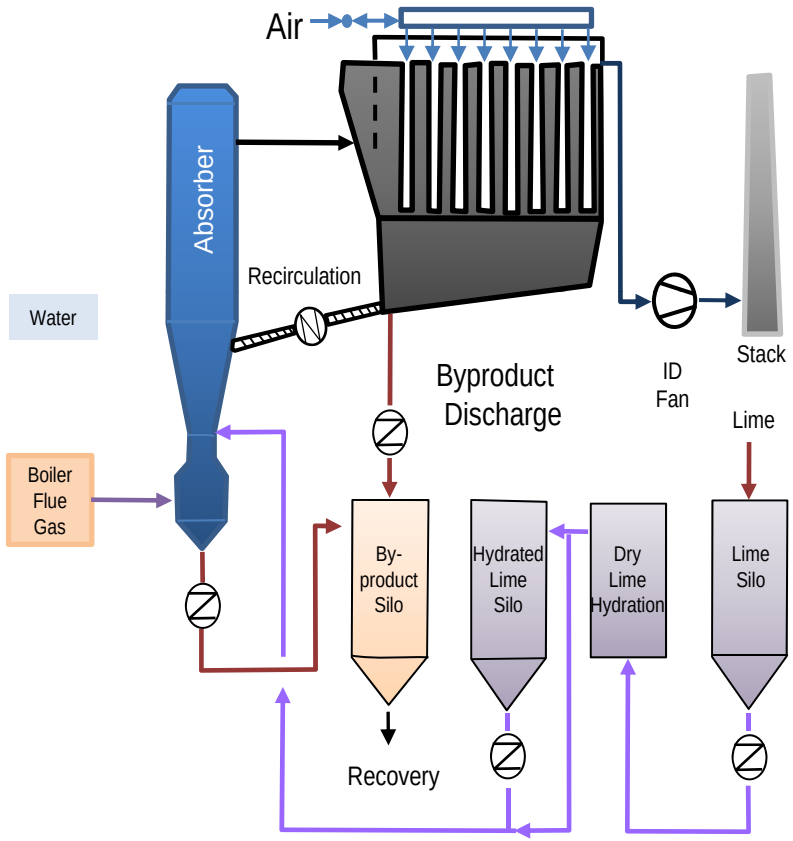
Dry SDA Technology Summary - Fit to Market

- Pros
  - Utilizes 30-40% less water than wet FGD
  - SO2 capture in the range of 90-95% with outlet SOx levels down to 0.065 lb/mbtu
  - SO3 capture up to 99%
  - Moderate capture of acid gases and metals
  - Single trains demonstrated up to 350 MWe
  - Lowest Capital Cost compared to wet FGD systems
- Cons
  - Limited to fuels under 2% sulfur
  - Requires expensive quicklime or pebble lime
  - High O&M than in dry systems due to expensive reagent, rotary atomizer and slurry system maintenance



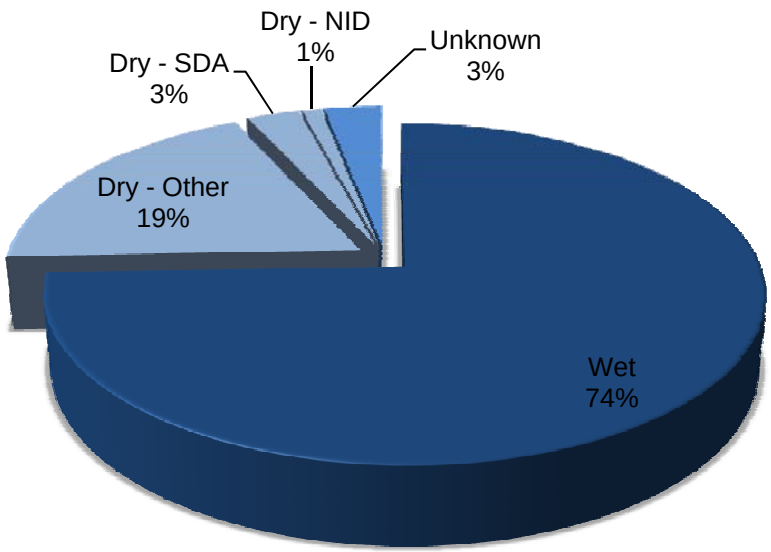
We See a Good Fit for Dry CDS Scrubber Technologies in Future Markets – Best Suited for CFB Technology

- Pros
  - Dry system using 30-40% less water than wet FGD
  - 50% lower capital cost then wet systems
  - Best capture of acid gases and metals in an FGD
  - SO2 capture in the range of 95%-99%
  - Demonstrated on fuel up to 3.5% sulfur
  - Single trains demonstrated up to 425 MWe
  - Very low operating cost for applications with calcium rich boiler ash (Ideal for CFB boilers)
  - Low maintenance cost since no rotary atomizers
- Cons
  - Higher capitol cost than SDAs for low ash fuels
  - System performance degrades with ESP
  - May require expensive hydrated lime (Ca(OH)2) as supplemental reagent for low ash fuels (under 5%)
  - High solids waste



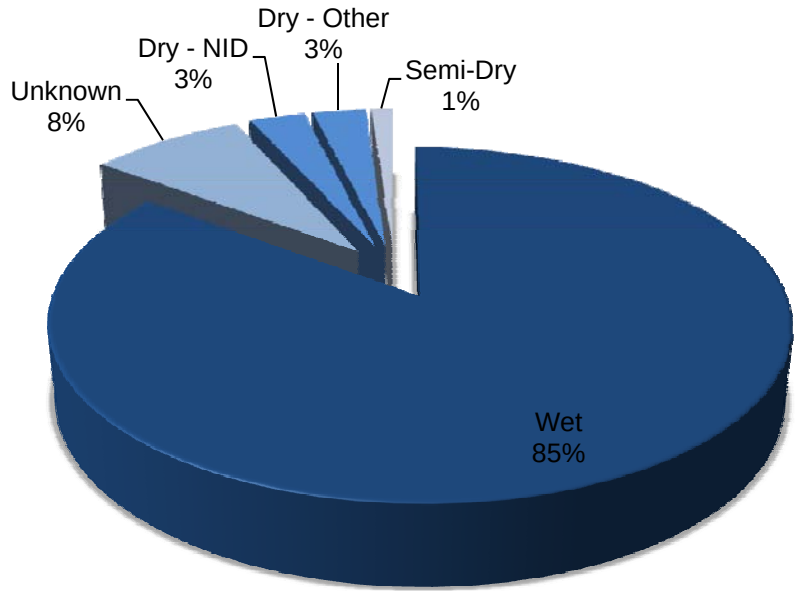
Historic FGD Market
- Wet vs. Dry FGD Orders over 2002-2011 period

North America



Total = 121 GWe

Europe

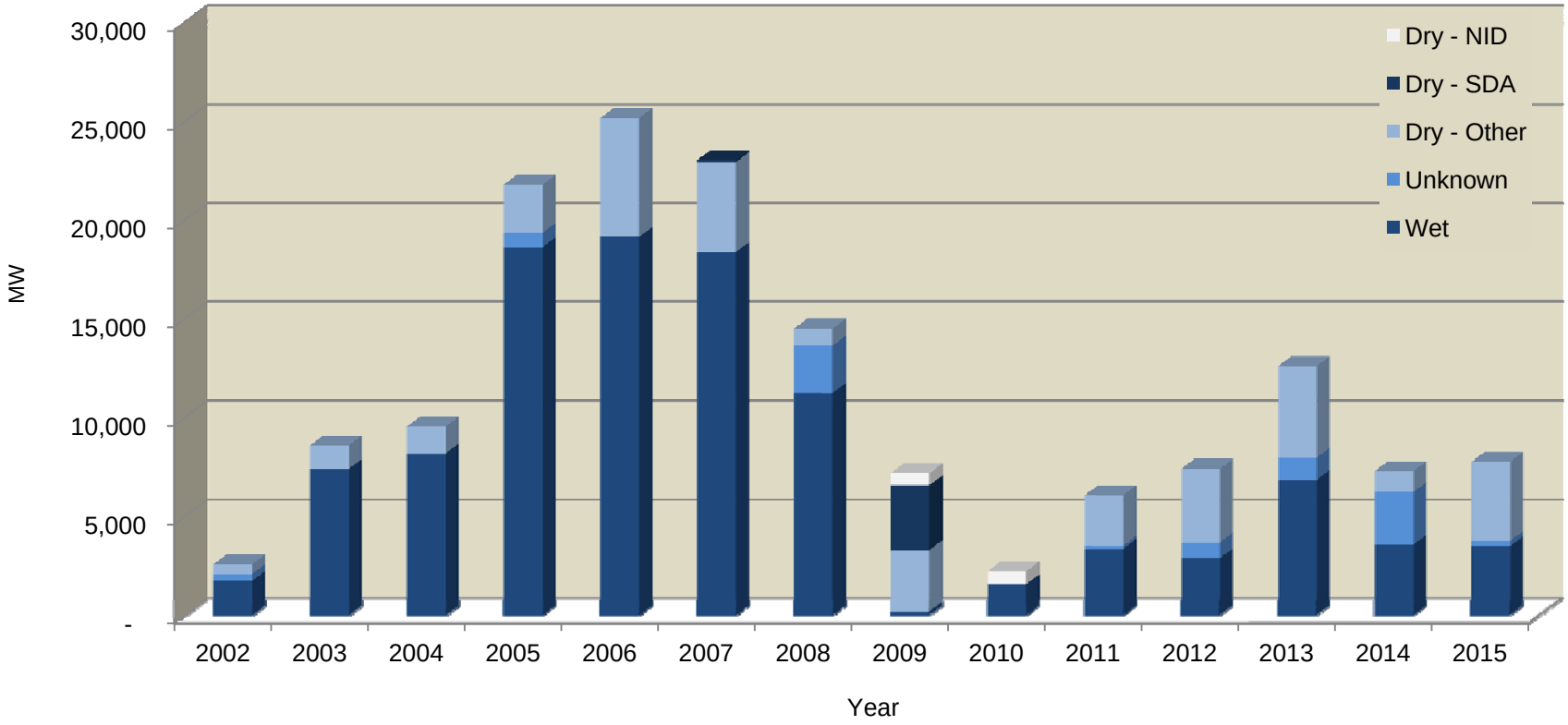


Total = 56 GWe

Source: McCoy Scrubber Orders 062012

North America FGD Market – History & Forecast

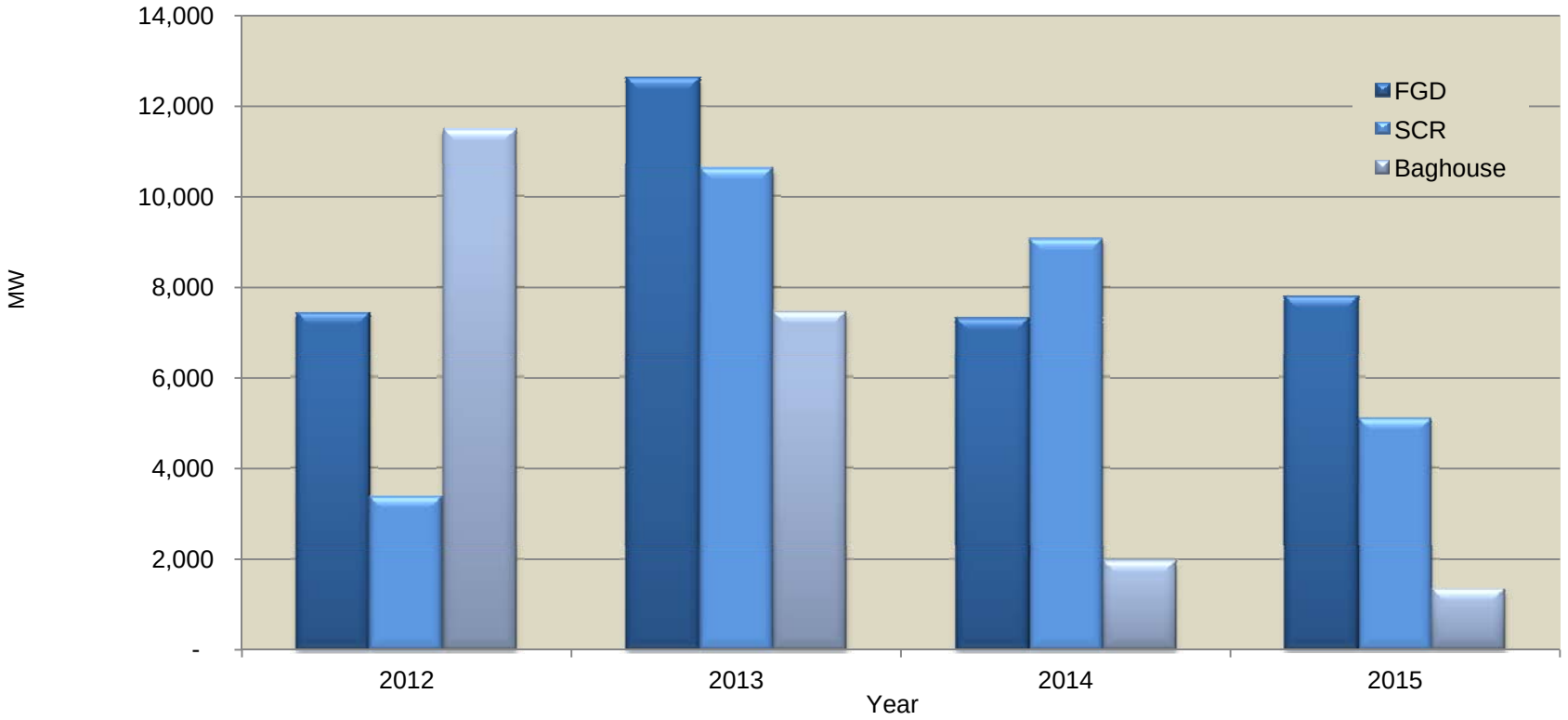
FGD Past Orders and Announced Projects



A second boom in the FGD Market is expected over the next 3 years with 50% Wet Scrubbers

Source: CERA, IIR, CRM (Caroccia January 2012) [History – McCoy Scrubber Orders June 2012]

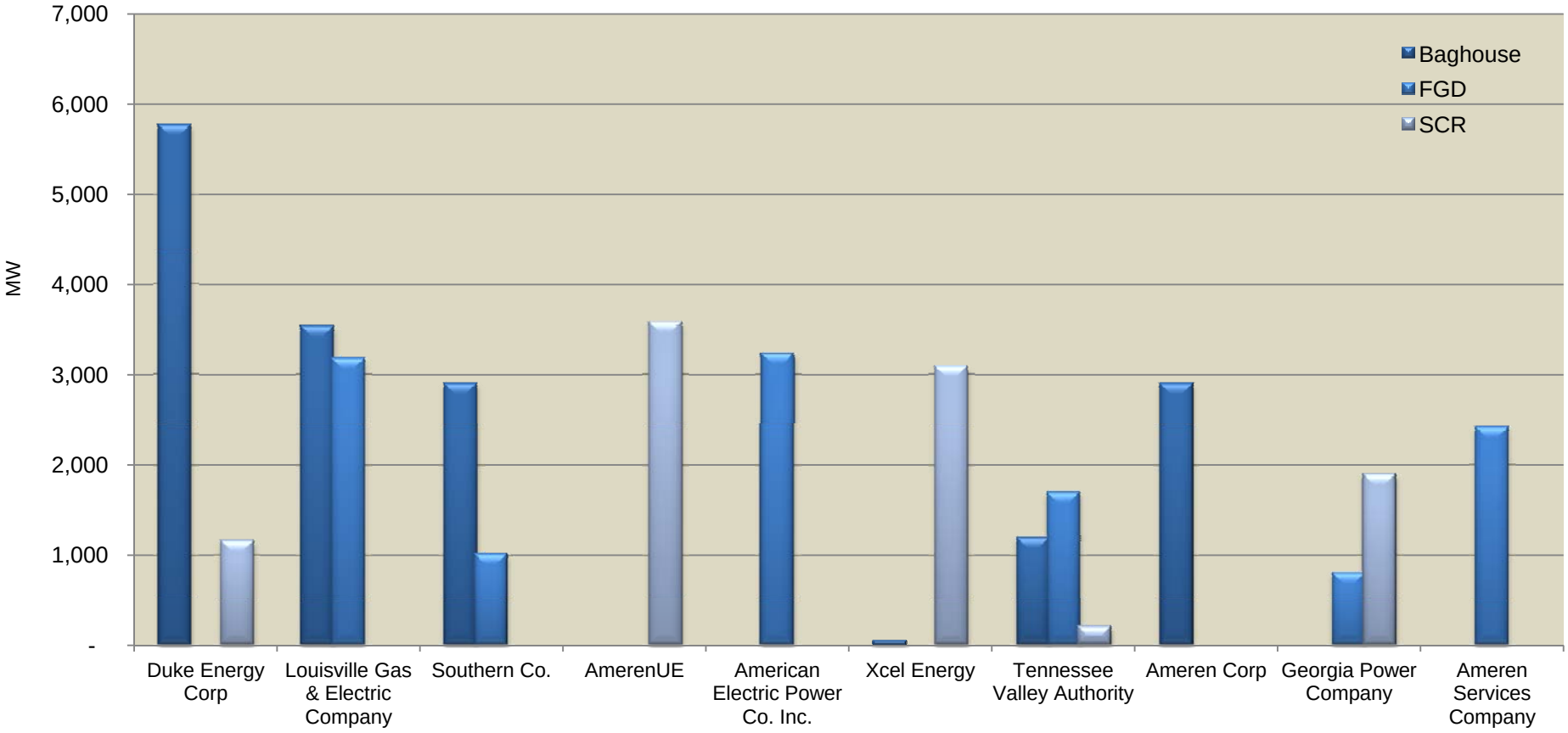
North America Announced AQCS Projects



Number of Units					
	2012	2013	2014	2015	TOTAL
FGD	17	32	20	12	81
SCR	11	23	21	10	65
Baghouse	24	21	6	4	55
TOTAL	52	76	47	26	201

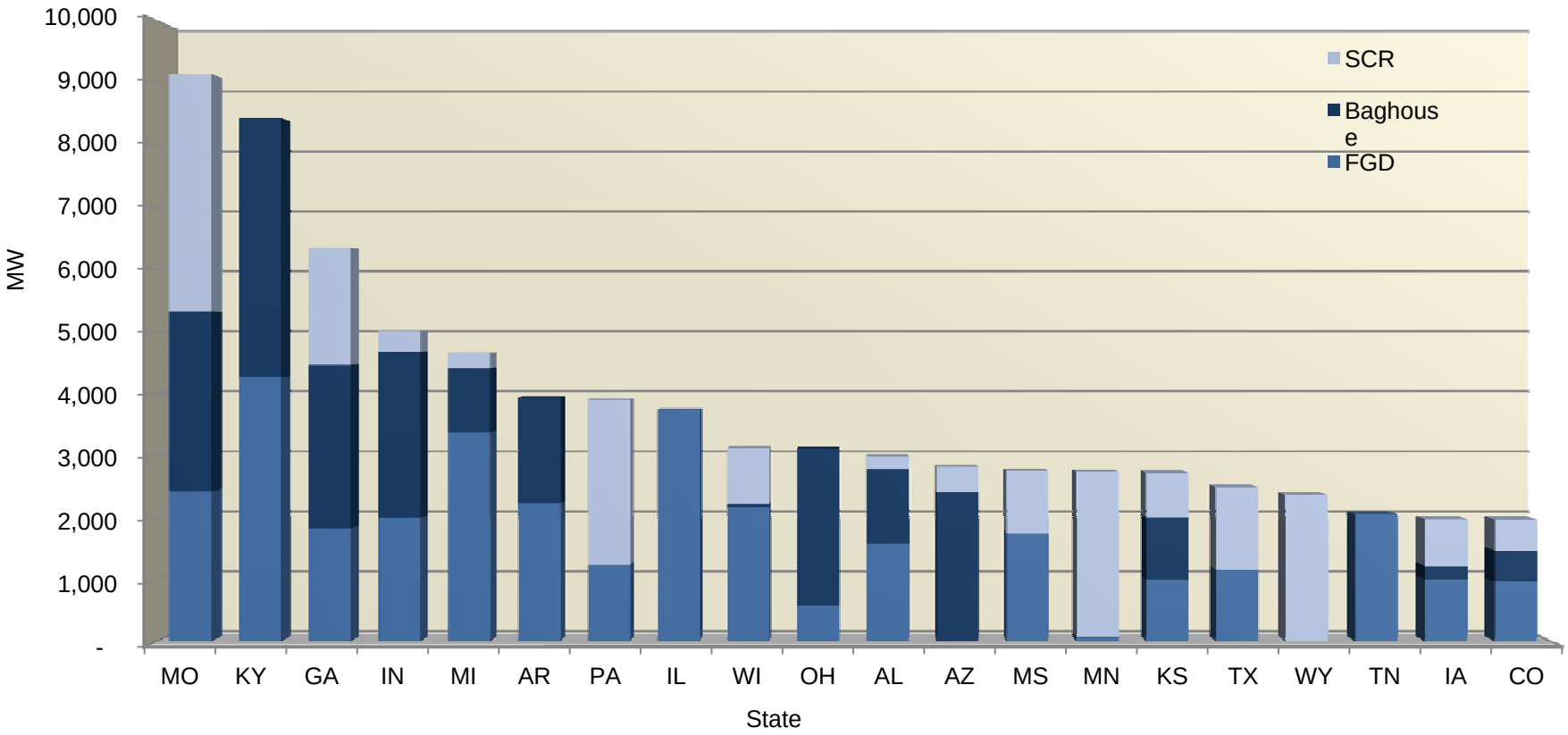
Source: CERA, IIR, CRM (Caroccia June 2012)

North America Announced AQCS Projects - Top Ten Customers over 2011–2015 period



Source: CERA, IIR, CRM (Caroccia January 2012)

North America Announced AQCS Projects
- A look by State (Top 20) over 2012-2016 Period



Source: CERA, IIR, CRM (Caroccia June 2012)

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