

# BEYOND COAL



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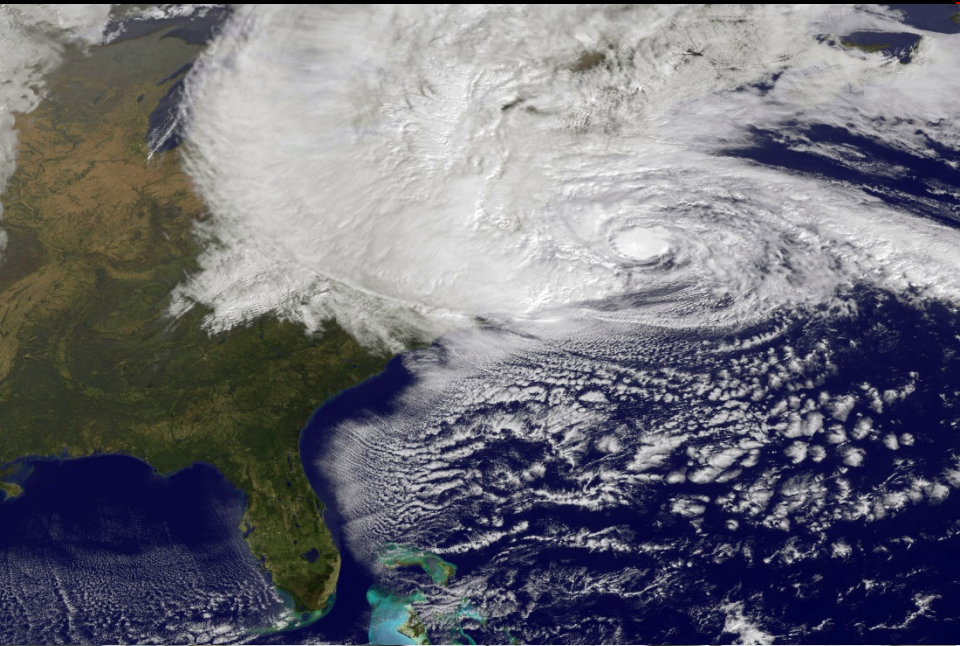
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# Climate Disruption is at our doorstep...





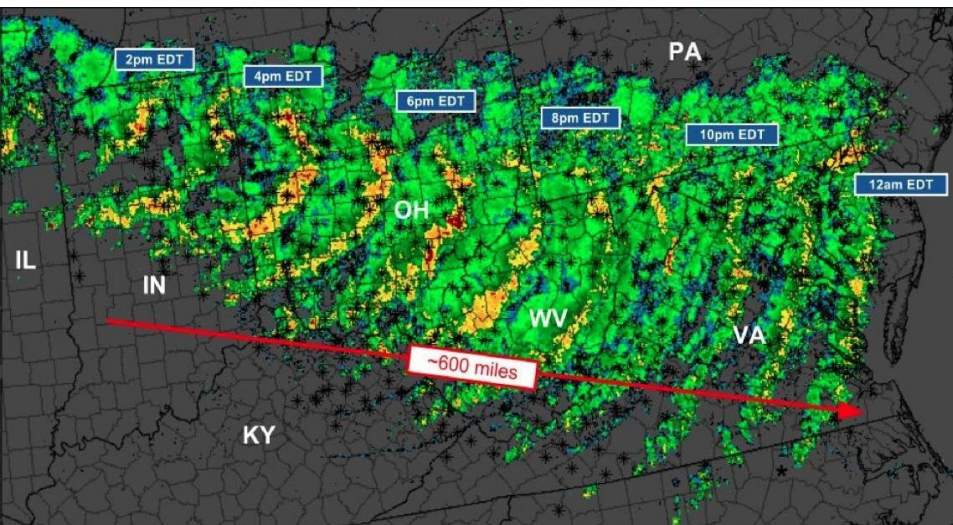
# Climate impacts



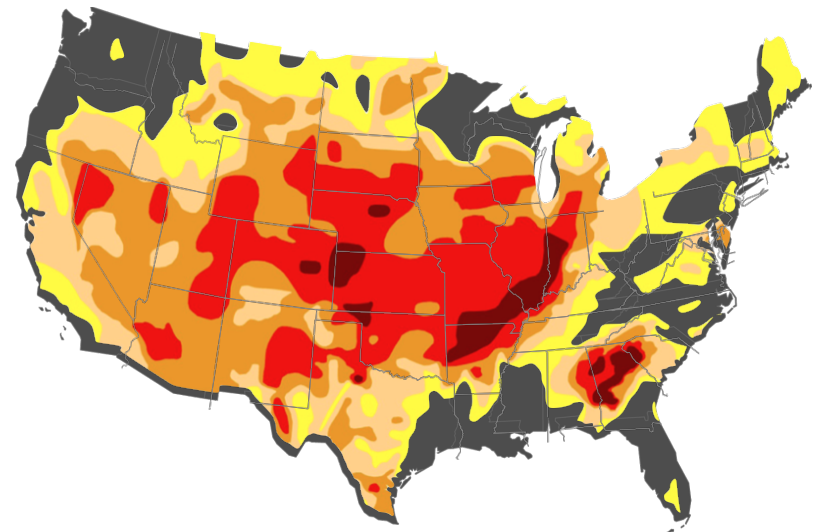
**Hurricane Sandy, October 2012**



**Colorado wildfires, June 2012**



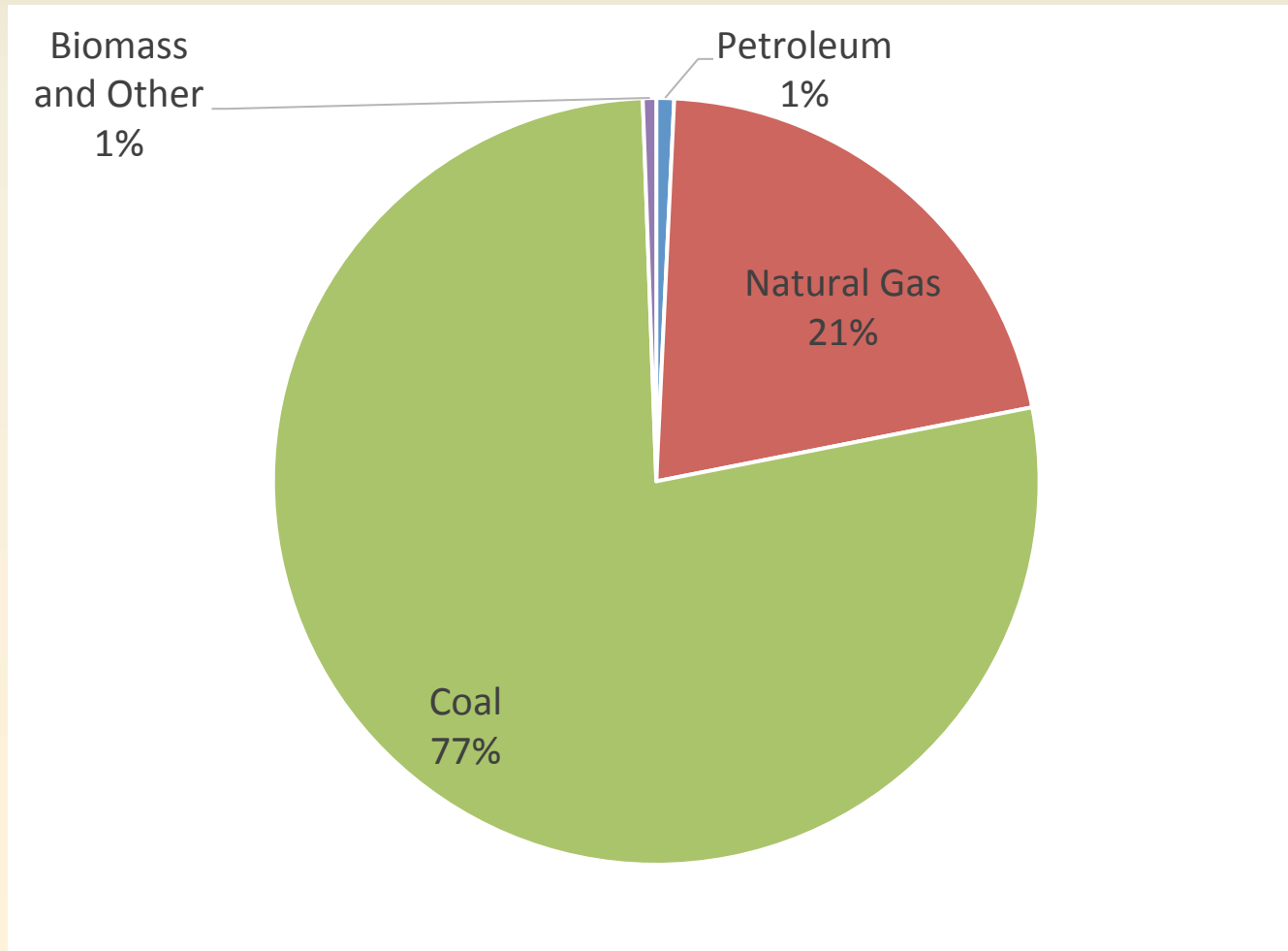
**Mid-Atlantic and Midwest Derecho, June 2012**



**U.S. drought conditions, July 2012**

# Coal Dominates Power Sector Emissions

## CO<sub>2</sub> Emissions from the Electric Power Sector (2013)



# Retrofit or Retire?

- In recent years, EPA has developed 7 types of rules to protect human health and the environment.
  - **National Ambient Air Quality Standards (NAAQS)**
  - **The Regional Haze Rules**
  - **Mercury and Air Toxics Standards (MATS)**
  - **Cross State Air Pollution Rule (upheld 2014)**
  - **Cooling Water Intake Rule (May 2014)**
  - **CO2 limits for existing power plants (111(d) draft June 2014)**
  - **Coal Combustion Residuals (CCR)**
  - **Effluent limitation guidelines**
- Economic implications for existing coal units can be enormous.
- Costly retrofits lock ratepayers into decades of continued reliance on polluting fossil fuels and repeated rate increases.

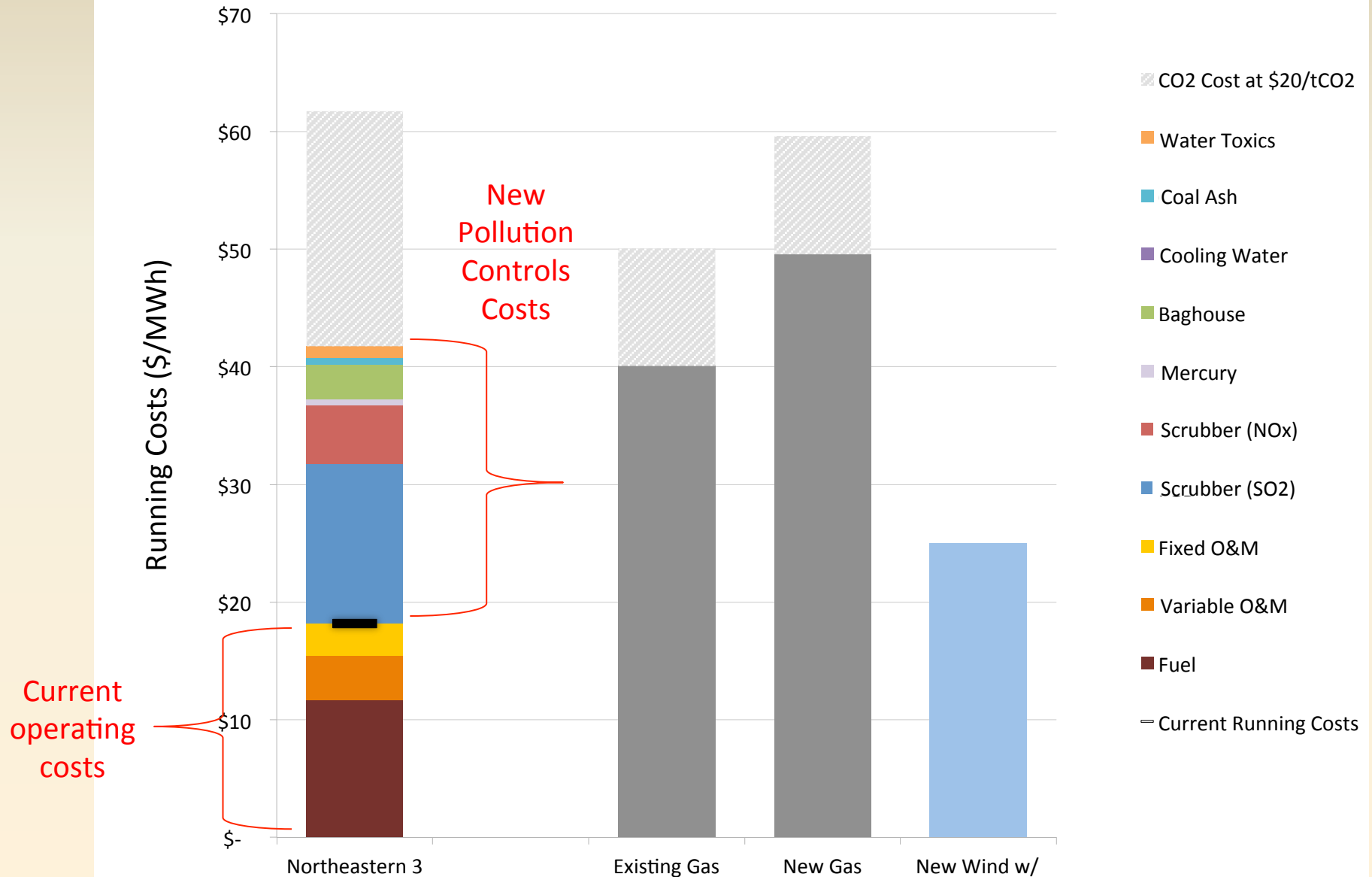
# Economics of Retirement

- **Kentucky Power's Big Sandy**
  - **Unit 2:** 830 MW
  - 2011 CPCN for \$940 million for pollution controls at Unit 2.
  - In discovery learned the retrofit would cost \$215 million more over its payback period than the next cheapest alternative.
  - Kentucky's industrial customers joined the Sierra Club in opposing the retrofit.
  - AEP withdrew the proposal, then announced in December 2012 it would retire Unit 2.
  - Retrofit would have caused a 31% rate increase.

# Economics of Retirement

- **PSO's Northeastern Plant, Oklahoma**
  - PSO entered into EPA settlement agreement for 3 units:
    - Allows for 2016 compliance date for both MATS and BART
    - PSO will retire Unit 4 in 2016
    - Retire Unit 3 in 2026 but begin sharply curtailing capacity in 2021
    - Retrofit and operate Unit 2
    - Over the next 15 years, PSO will transition to natural gas, wind and energy efficiency
    - According to PSO, phasing out coal-fired generation to mitigate future risk of additional compliance costs for EPA regulations

# Example: Northeastern 3, OK (473 MW)





# Economics of Retirement

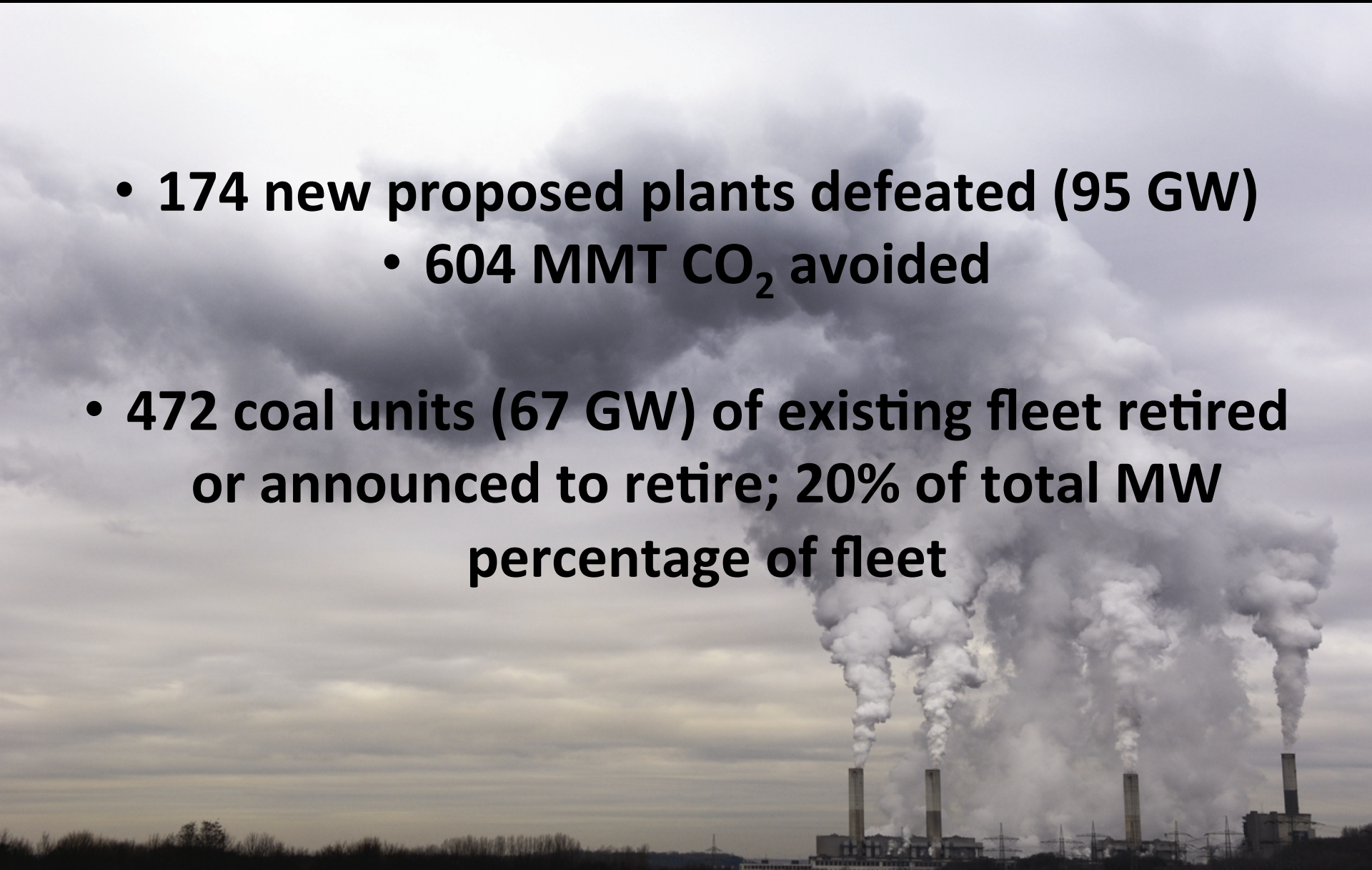
- **NV Energy's Reid Gardner Plant, Nevada**
  - 557 MW nominal
  - The company faced retrofitting Units 1 -3 for BART by 2018
  - In 2012, NV Energy spent \$27 million on Unit 4; millions on waste water pond expansion
  - Faced with spending millions more on expanding coal ash landfill
  - Moapa Indian tribe bore the burden of plant's pollution
  - Stored excess coal onsite because the plant was too expensive to run much of the time
  - Company-supported legislation retires Units 1-3 this year, Unit 4 in 2017

# Imprudent Coal Plant Retrofits

- **In 2012, Oregon PUC disallowed recovery of certain coal plant expenditures, finding the company acted imprudently by failing to:**
  - Conduct a reasonable alternatives analysis.
  - “Incorporate potential costs of known, emerging regulations.”
  - Update its analyses to reflect changing economic conditions.
- **Going forward, the company must fully evaluate its major coal plant expenditures that work to extend the useful life where plant shutdown is an option.**

# Beyond Coal Campaign Stats

- **174 new proposed plants defeated (95 GW)**
  - **604 MMT CO<sub>2</sub> avoided**
- **472 coal units (67 GW) of existing fleet retired or announced to retire; 20% of total MW percentage of fleet**





# Recent Renewable Costs

- New Mexico Solar:
  - \$57.90 /MWh for 50 MW Macho Springs Solar (El Paso Electric Co., New Mexico PRC Case No. 12-00386-UT)
- Colorado Solar PV:
  - “For the first time in Colorado, bids for PV Solar would create a reduction in customer costs as part of a least-cost resource portfolio.” Xcel, Colorado PUC, Decision No. C13-1566, p.5.
- New Mexico Wind
  - Mammoth Wind PPA (199 MW): \$19.18 /MWh (2% escalation through 2020).
  - Palo Duro PPA (249 MW): \$21.10 /MWh (1.8% escalation through 2020).
  - Xcel, New Mexico PRC, Final Order or Recommended Decision, p.6, Docket 13-00233-UT.

# Levelized Cost of Electricity Trends



# How we will do it: Replace coal with clean energy

Wind



Solar



Energy efficiency

