

Planning under Climate Change/ Environmental Uncertainty



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Company Overview



Coal/Lignite
66%



Nat. Gas/Oil
22%



Nuclear
6%



**Pumped Storage/
Hydro/Wind**
6%

AEP's Generation Fleet
39,000 MW Capacity



5.2 million customers in 11 states
Industry-leading size and scale of assets:

<u>Asset</u>	<u>Size</u>	<u>Industry Rank</u>
Domestic Generation	~39,000 MW	# 2
Transmission	~39,000 miles	# 1
Distribution	~214,000 miles	# 1

Context: Key Economic Challenges / Uncertainties

- **Environmental Challenges**
- **Volatile Fuel Costs**
- **Post-Recession Load Recovery**
- **Energy Security**
- **Need for Infrastructure Replacement**
- **Difficult Economic Climate**

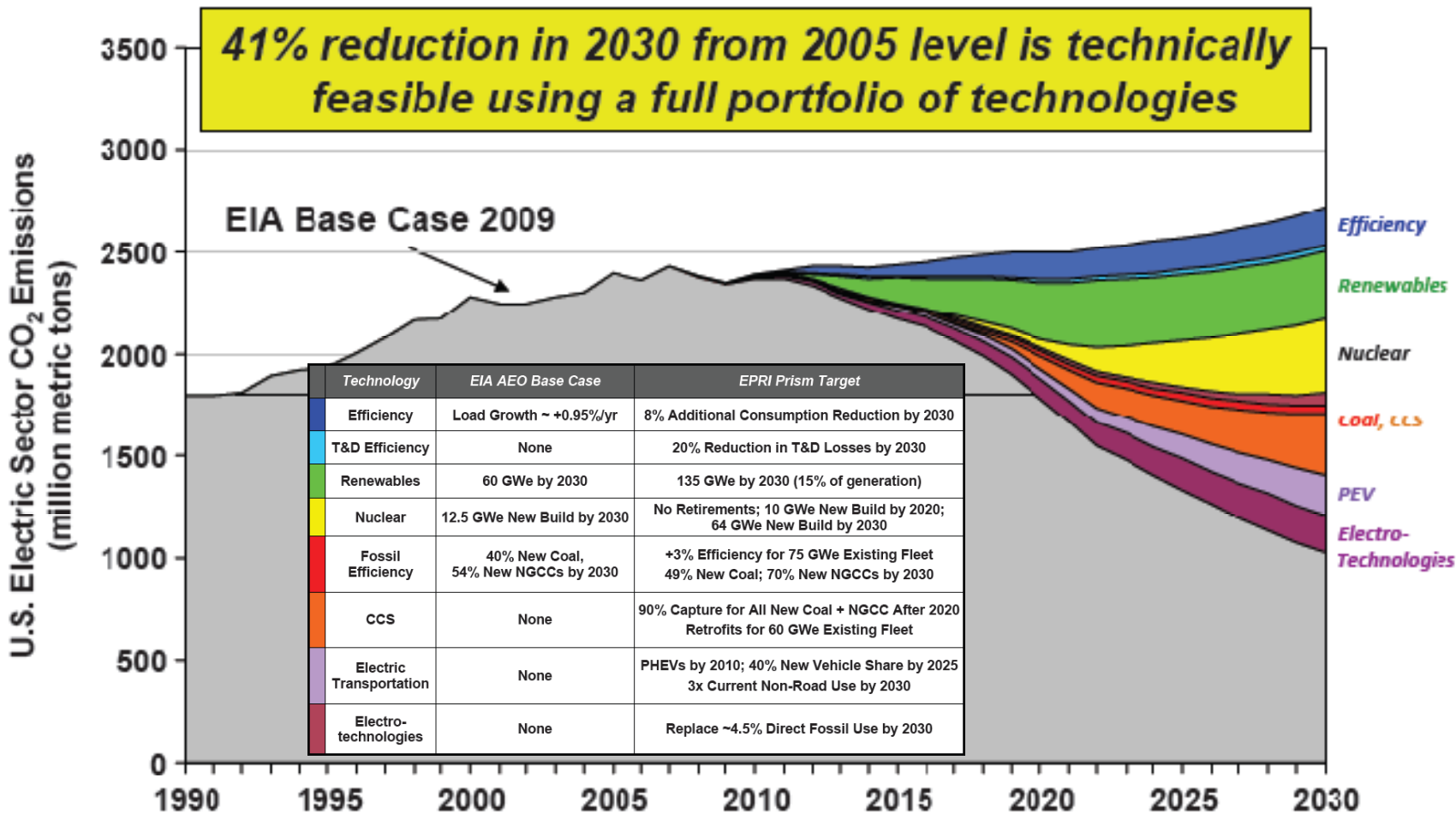
Environmental Challenges

- **Climate Change**
- **SO₂ & NO_x**
- ***Mercury and other Hazardous Air Pollutants (HAPs)***
- ***Coal Combustion Byproducts***
- ***Water Quality / Aquatic Impacts***

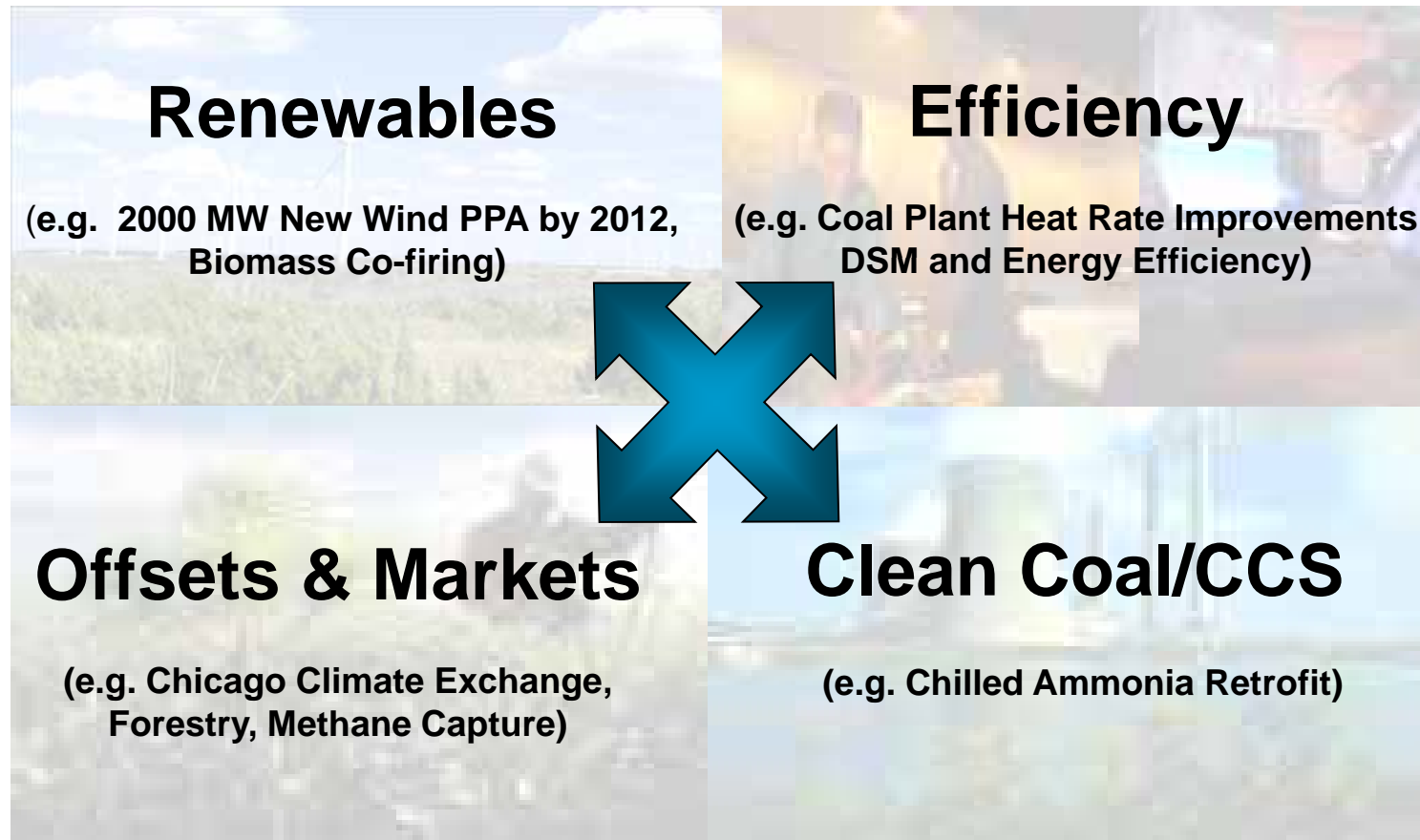
Climate Policy Summary and Status

- ***Kerry-Lieberman draft legislation or variant may be brought to the floor in July.***
 - ***Passage unlikely in 2010 (oil spill, election year, etc.)***
- ***Prospects are much better in 2011 IF a truly bipartisan climate and energy bill can be developed.***
- ***Legislation favorable compared to EPA regulations, which will be costly.***
- ***Several outstanding Congressional proposals to limit/postpone EPA action (e.g. Rockefeller bill).***

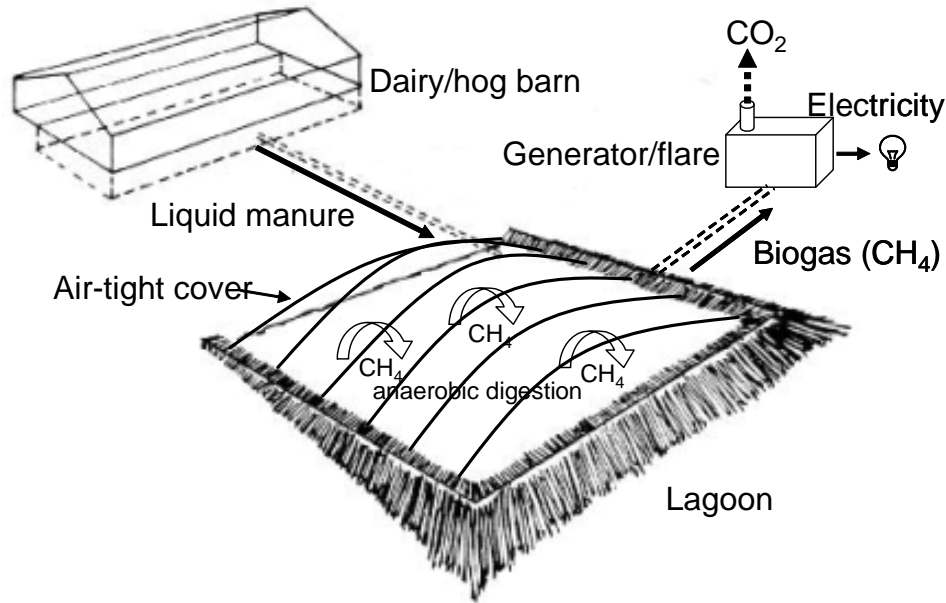
Targets: Require A Portfolio of Significant Investments



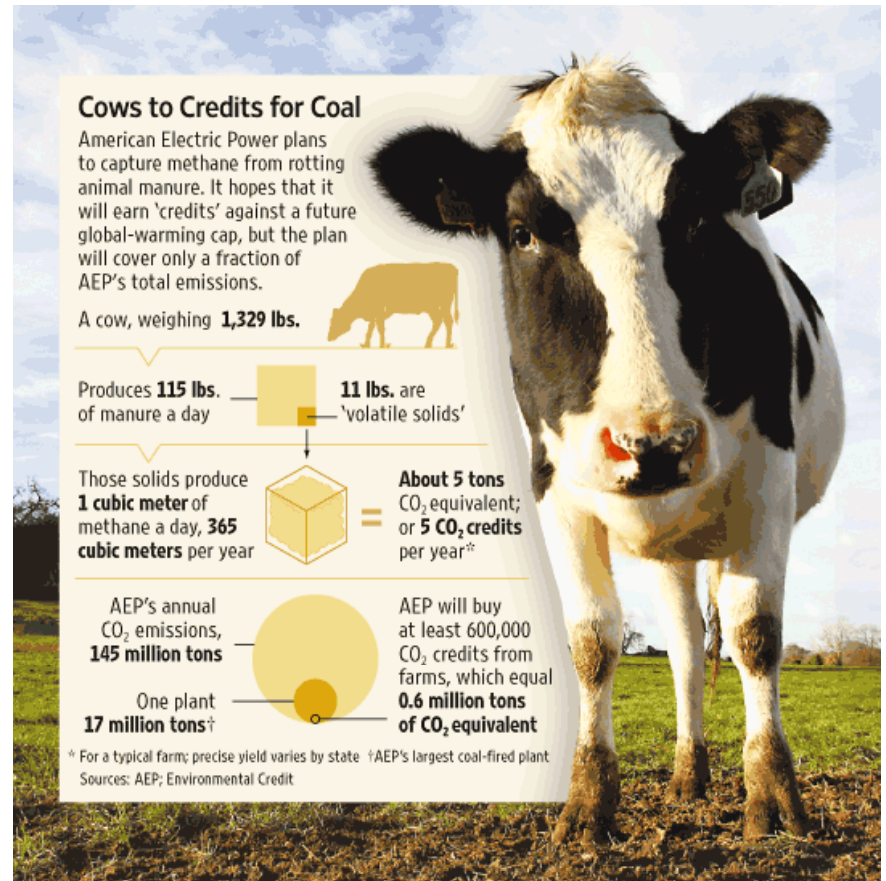
AEP's GHG Reduction Portfolio



Early Action in Offsets: Livestock Methane



- **Methane (CH₄) is ~20 times as potent a GHG as CO₂.**
- **Reducing 1 ton of methane emissions is equivalent to reducing ~20 tons of CO₂ emissions.**



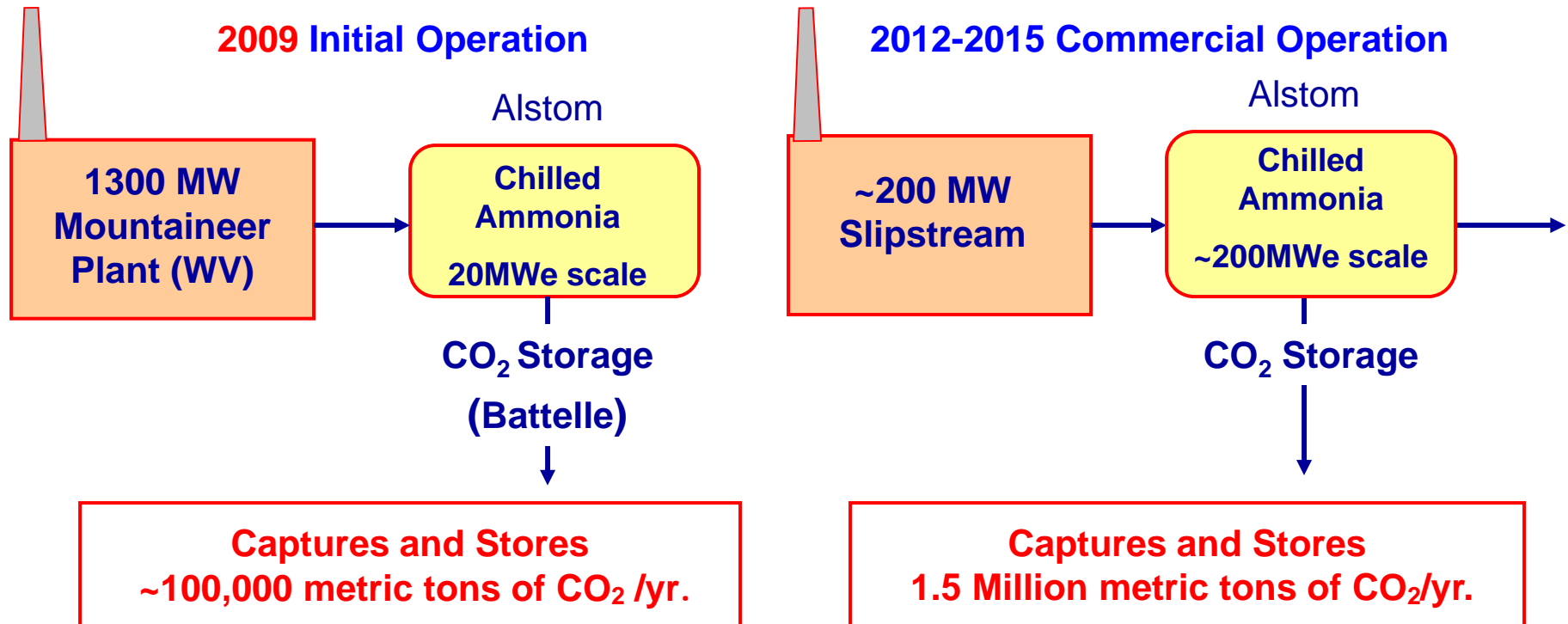
New Technology: Chilled Ammonia CCS

Phase 1

Phase 2

2009 Initial Operation

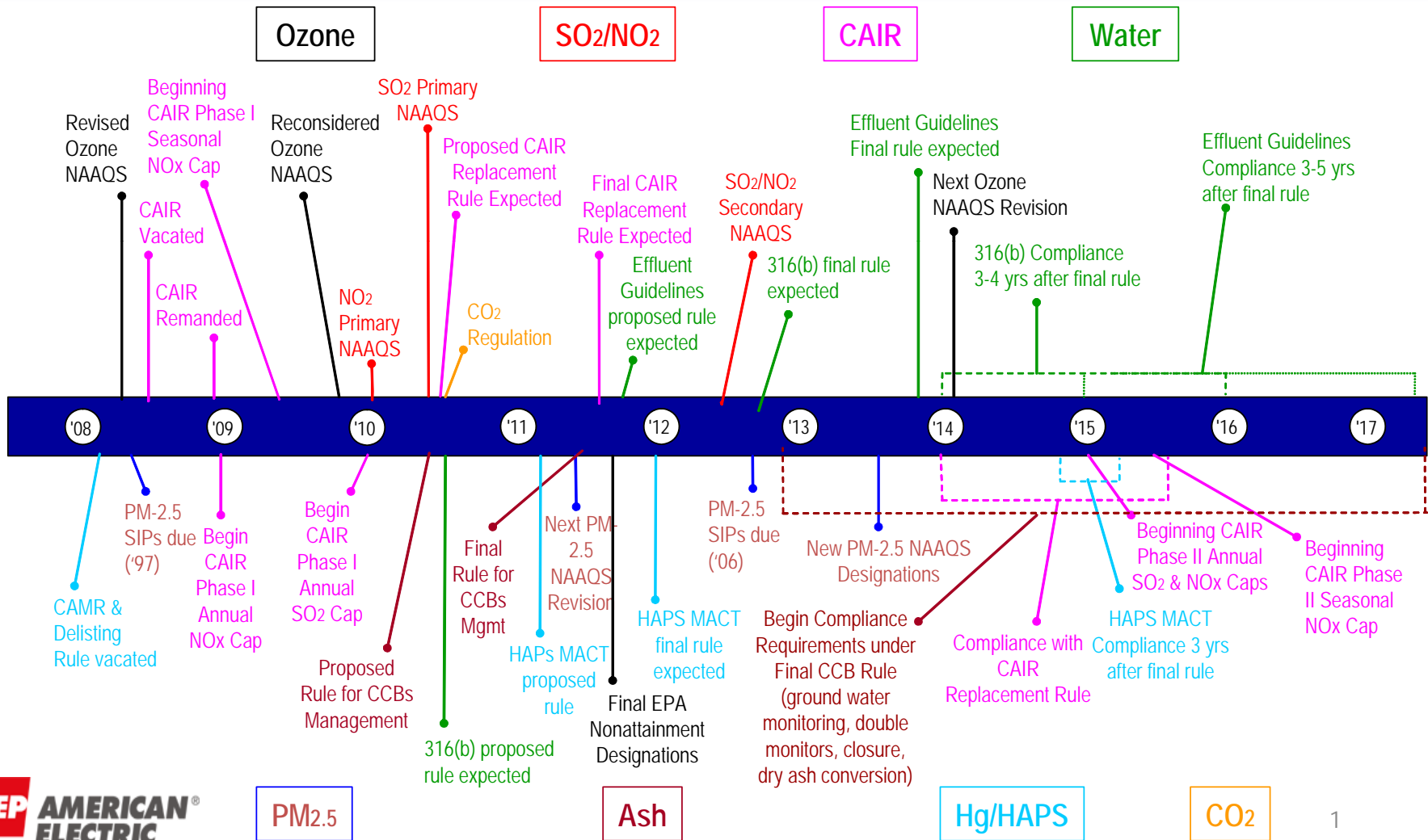
2012-2015 Commercial Operation



Other Emerging Environmental Drivers

- ***EPA rules are expected on SO₂, NO_x, Hg, other HAPs and coal ash within the next two years.***
- ***Largest impact of regulations will be on older coal units which are generally without FGD/SCR.***
- ***Majority of required action likely to occur over next five years.***
- ***Major planning challenges for future electric generation due to large uncertainties.***

Regulatory "Train Wreck"



Rate Recovery Mechanisms

- ***Many carbon and environmental investments will be capital intensive requiring innovative regulatory practices to help ensure cost-effective investments occur:***
 - ***Pre-approval Prudence***
 - ***Contemporaneous Recovery of Capital (CWIP in rate base)***
 - ***Environmental Trackers (e.g. environmental surcharge)***