

Role of Offsets in GHG Program Compliance

June 2008

Scott A. Weaver



Company Overview



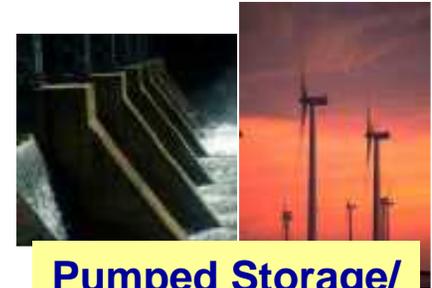
Coal/Lignite
69%



Nat. Gas/Oil
23%

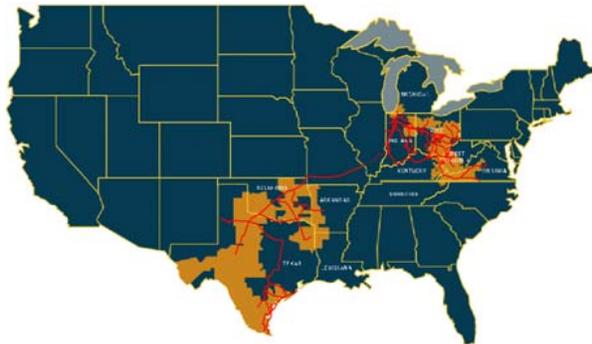


Nuclear
6%



**Pumped Storage/
Hydro/Wind**
3%

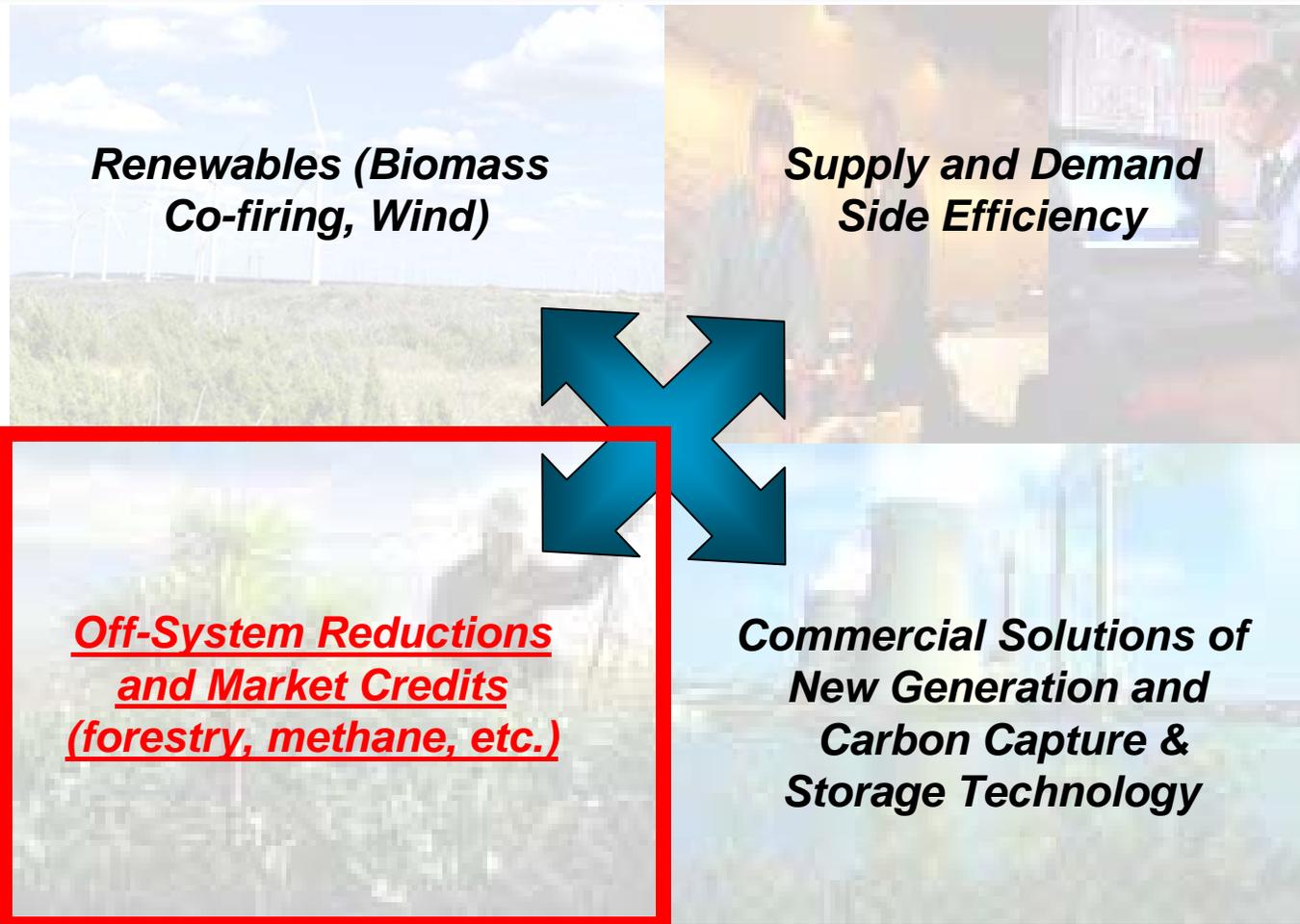
AEP's Generation Fleet
38,060 MW Capacity



5.1 million customers in 11 states
US Industry-leading size and scale of assets

<u>Asset</u>	<u>Size</u>	<u>US Industry Rank</u>
Generation	~38,000 MW	#2
Transmission	~39,000 miles	#1
Distribution	~208,000 miles	#1
CO₂ Emissions	~150 MM tons	#1?

AEP's Approach: A GHG Reduction Portfolio



Why are Offsets Important?

- *Offsets provide an opportunity for AEP to achieve quantifiable emission reductions from emission sources outside of the AEP system at costs significantly less than AEP's marginal internal abatement options (e.g. renewables, natural gas switching & CCS).*
- *Most offset projects do not have the technical/political risks of clean coal or nuclear, and as such may be a lower risk source of GHG reductions at the beginning of a federal program.*
- *Offset projects can be structured to deliver benefits over long time horizons with low variable cost risk.*
- *Through early action and long-term forward contracts, offsets may be available for a significant discount to projected market prices.*
 - *However, the discount pricing will likely diminish/disappear as legislation gets more imminent.*

AEP Offset Strategy

- *Recognizing the current low-costs associated with GHG offset projects and the high probability that prices to procure offsets will only tend to rise in the future, AEP has begun implementing a voluntary proactive strategy with regard to offsets.*
- *Our voluntary offset strategy calls for AEP to develop or procure 2.5 million tons per year of offsets as part of our larger voluntary greenhouse gas strategy to reduce emissions by 5 million tons by 2011.*
- *Some of the offsets will be used in conjunction with our current commitment in the Chicago Climate Exchange.*
- *It is likely that we will also consider ramping up our participation even further over the next several years as greater certainty surrounding Federal GHG Legislation emerges.*

AEP's Current CO₂ Reduction Commitment

Existing Programs

- Existing plant efficiency improvements
- Renewable Energy
 - 800 MWs of Wind
 - 300 MWs of Hydro

■ Domestic Offsets

- Forestry – 0.35MM tons/yr
- Over 63MM trees planted through 2007
- 1.2MM tons of carbon sequestered

■ International Offsets

- Forestry projects have resulted in 1MM tons of carbon sequestered through 2007

- Chicago Climate Exchange

AEP's reductions/offsets of CO₂:
2003-2007: 46 MM tons

New Programs (by 2011)

- 1000 MWs of Wind PPA:
2 MM tons/yr

- Domestic Offsets (methane/forestry/other):
2.5 MM tons/yr

- Fleet Vehicle & Aviation Offsets:
0.2MM tons/yr

- Additional Actions - End Use and Supply Efficiency and Biomass: 0.3MM tons/yr

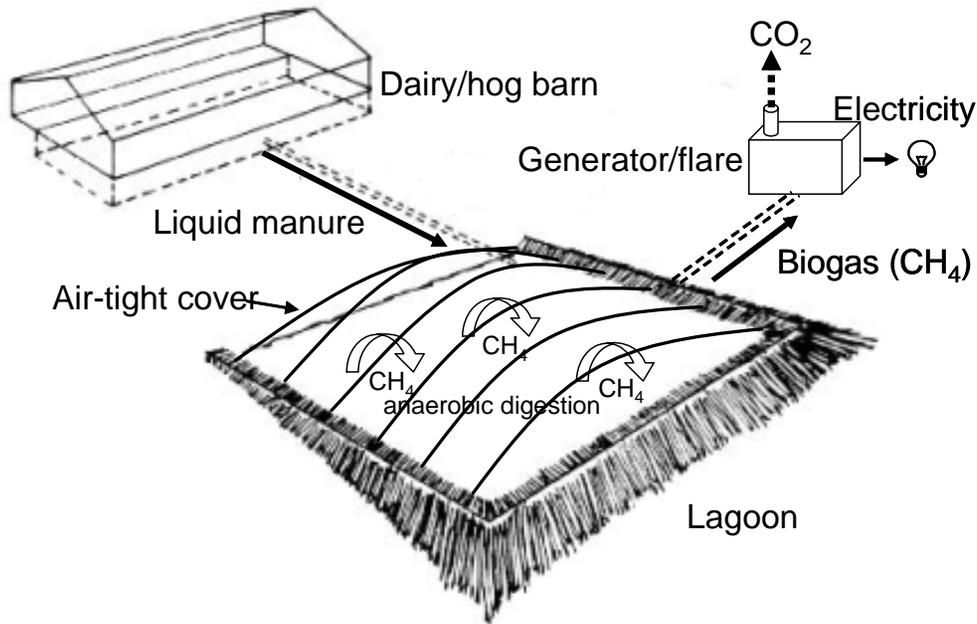
New Technology Additions

- New Generation – IGCC and USC
- Commercial solutions for existing fleet
 - Chilled Ammonia
 - Oxy-Coal

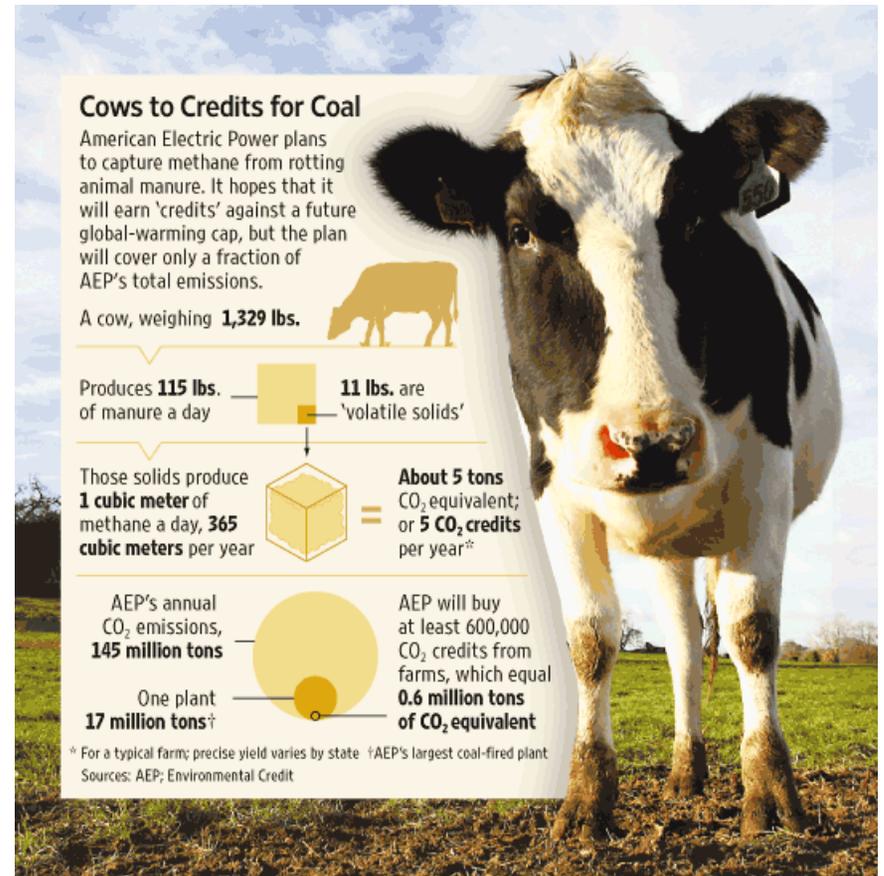
AEP's reductions/offsets of CO₂:
2011+: 5 MM tons/year

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.



Offsets Can Limit Costs

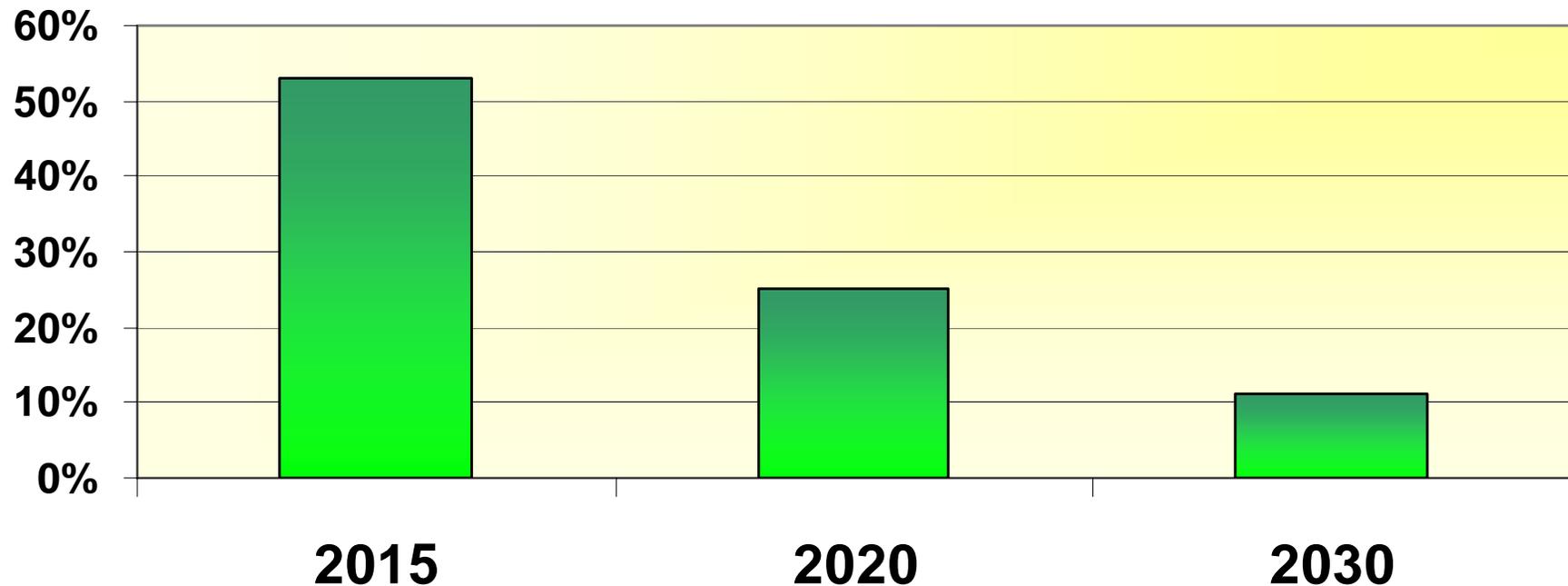
AEP Assessment of Lieberman-Warner

- **Using modest assumptions as to offset availability under the legislative language, AEP's internal analysis indicated that offsets were single most important source of low-cost reductions in meeting emission caps.**
- **Reductions from offsets occur at the most important phase under a stringent GHG program, the beginning, prior to the commercial development and deployment of CCS and new nuclear technologies.**
- **The early availability of offsets prevents short-term high-cost solutions (e.g. natural gas switching).**
- **Without offsets, the cumulative cost to AEP's customers of the L-W bill through 2030 would be \$7.4 billion higher.**

Fully eliminating quantitative and geographic limitations on offsets could provide even greater cost savings and financial certainty to AEP's customers and the US economy.

Offsets Are An Integral Part of Compliance

Offset Purchases as a Percentage of AEP's Total Emission Reductions Under L-W



Potential Barriers to Offset Participation

- *Financial risk associated by taking early action without legislative certainty*
- *Compliance risk that projects become bogged down in real/additional/verifiable review process*
- *What type and level of interaction in the offset market is prudent for a regulated utility?*
 - *Recovery of costs through regulated rates is likely subject to a time lag*