

# Nortex CO2 for EOR as CCUS Conference Policy Incentives and Barriers

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# Introduction

## Hunton & Williams LLP

- Founded in 1901, Richmond, VA
- 800+ lawyers, 19 offices, 6 countries
- Dallas, Houston, Austin
- Strong focus on energy and environment, particularly air

## Personal

- Partner, Hunton & Williams LLP 2005 - present
- Decade experience on Capitol Hill
- Counsel, House Committee on Energy & Commerce
- Represent utilities, oil and gas, other energy clients on energy/environment
- Founded CCS Alliance in 2008



# What We Will Discuss

1. Cost and regulatory structure in utility industry
2. CCUS regulatory issues
3. CCUS incentives and barriers

# Utility Regulatory Structure and CCUS

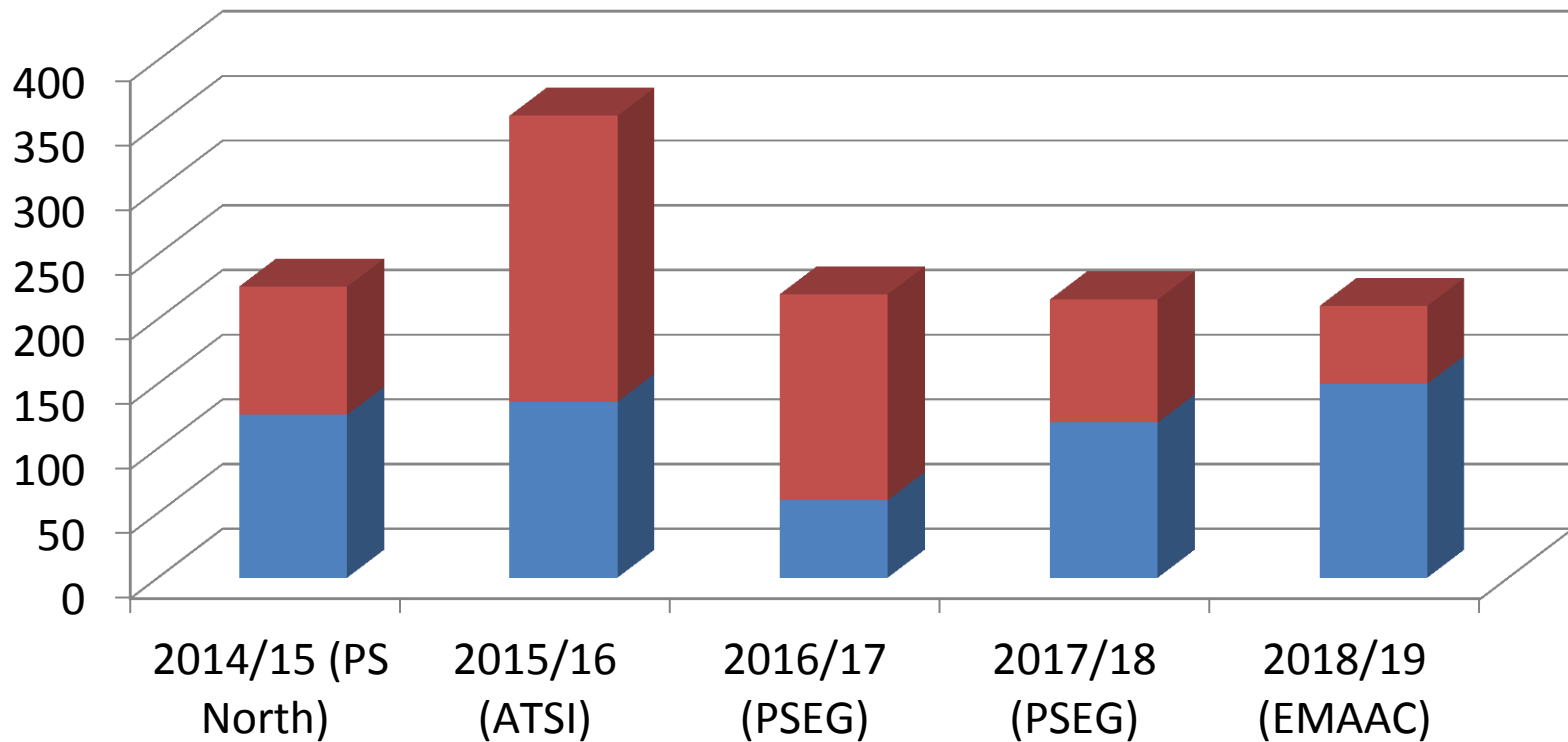
- Regulated markets
  - Least-cost planning or “integrated resource planning”
  - States may take into account special State benefits
    - Kemper – lignite, oil, water, jobs, world leadership
  - Mountaineer – Virginia rejected recovery for “CCS-ready” expenses

# Utility Regulatory Structure and CCUS

- Deregulated markets
  - Market-based rates
  - Utility typically no longer owns generation (parent company may)
  - Auction-based clearing mechanism
  - Cost of new environmental controls changes
  - Capacity markets send signals to maintain existing generation and build new generation

# PJM Base Residual Auction Results

## Annual Resources: RTO-wide, high zone



## Renewables Subsidies/Incentives

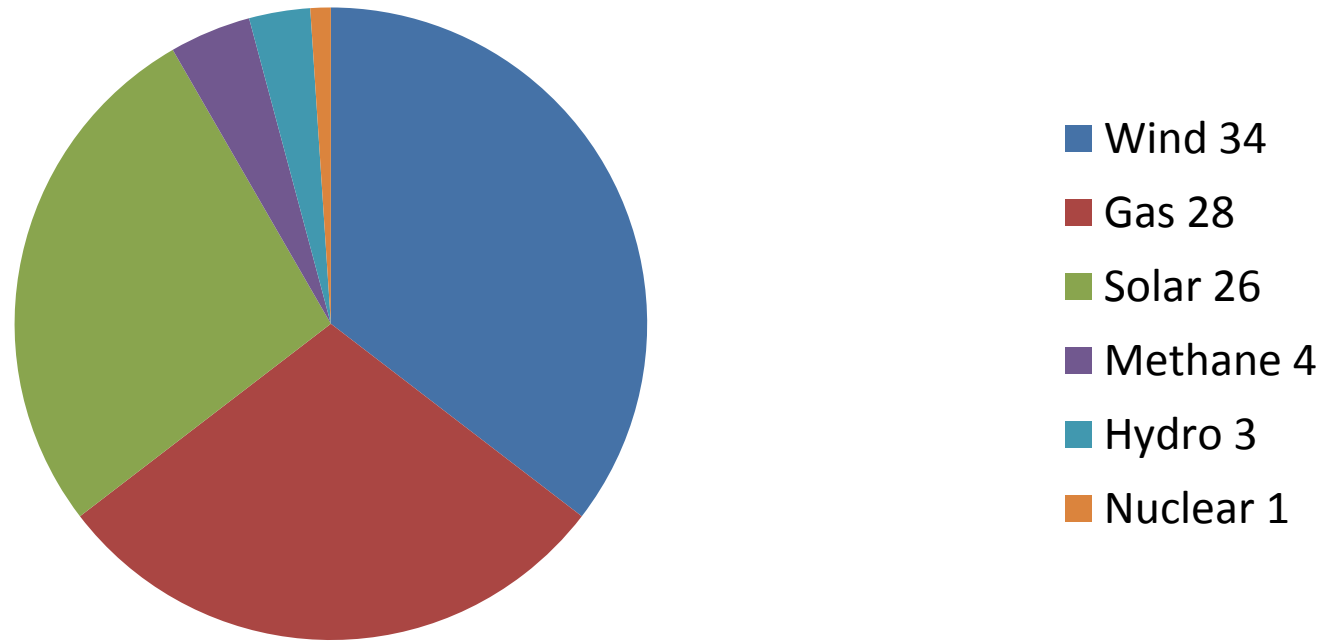
- Section 45 Production Tax Credit - \$23 MWh
- Investment Tax Credit
- DOE loan guarantees
- Carbon credits (RGGI, CPP?)

### ***AND PURCHASE OBLIGATIONS***

- PURPA mandatory purchase at avoided cost (repealed for “competitive” areas)
- State RPS (16 States plus D.C.)

# PJM Generation Under Construction

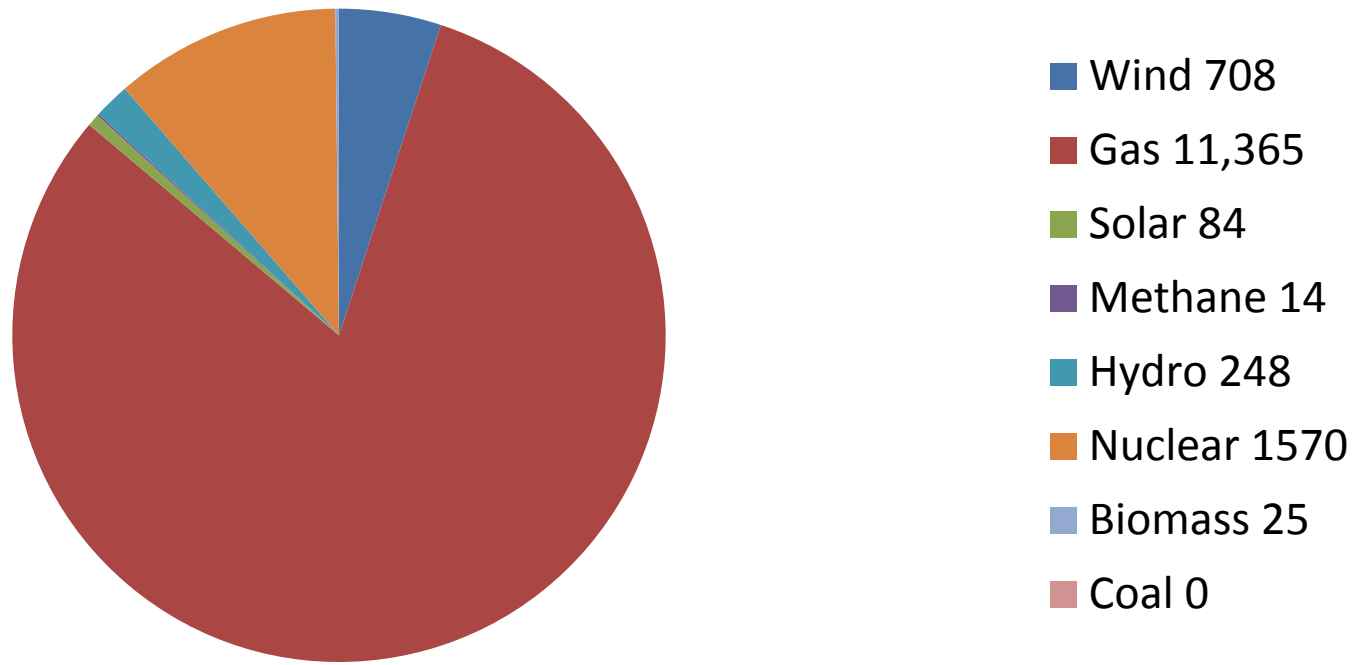
**Number of Projects: Coal = 0**





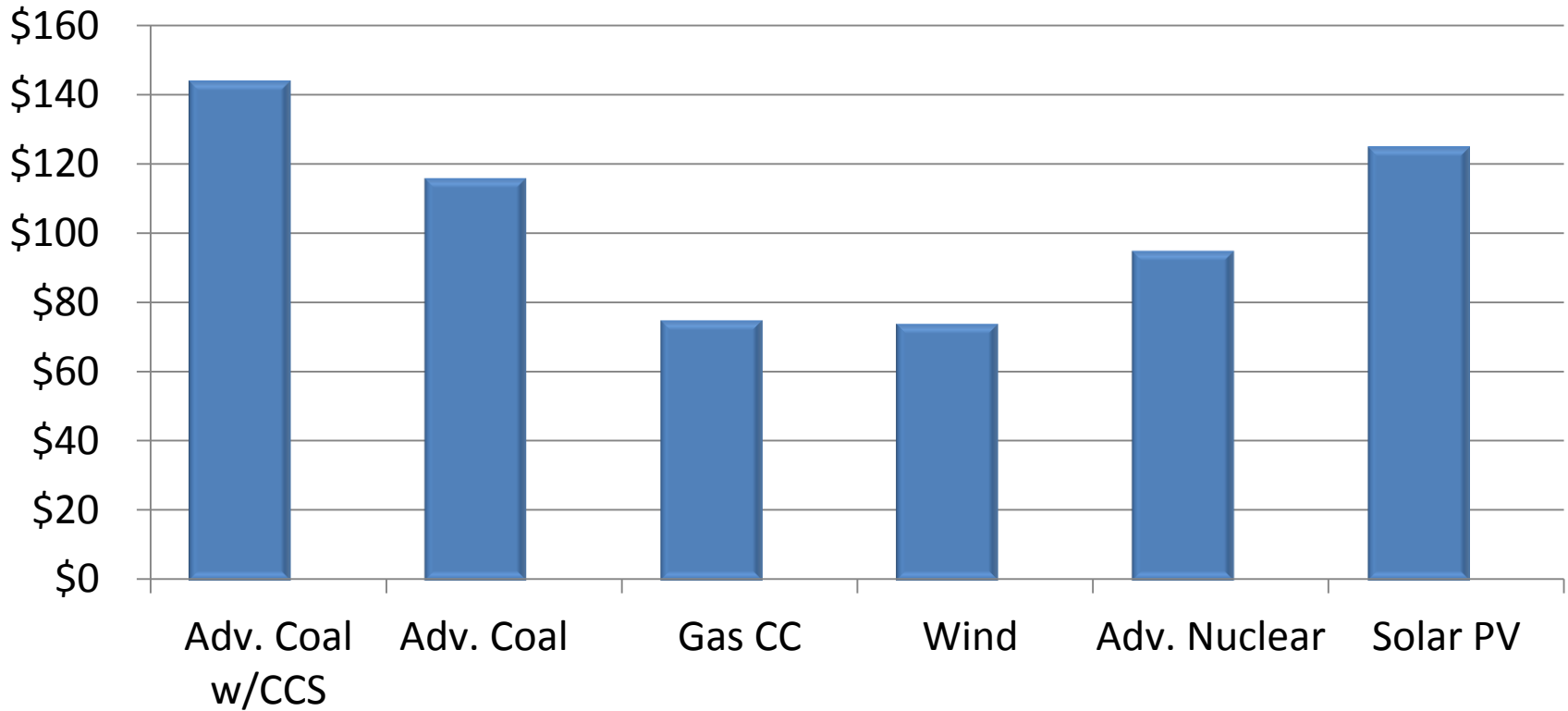
# PJM Generation Under Construction

## Transfer Capacity Requested



# Cost of New Generation

*EIA Data*

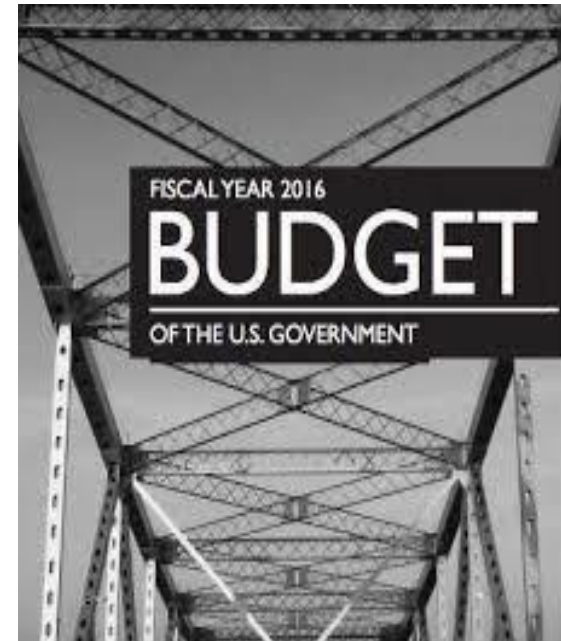


## Existing CCUS Incentives

- Section 45Q tax credit
  - \$21.51/ton for non-EOR storage
  - \$10.75/ton for EOR storage
  - Limited to 75 million tons
  - Complications from storage rules
- DOE Clean Coal Program – RD&D
- GHG regulations – incentive or barrier?

# President's FY 2016 Budget Proposal

- Two new tax incentives:
  - \$2 billion for new/retrofitted power plants with CCS capturing at least 75% of CO<sub>2</sub>
    - 30% ITC
    - Retrofits only: > 250 MW and 1 million tpy
    - 70% must go to projects at least 75% coal
    - No more than 60% to new plants or retrofits
  - Sequestration tax credit
    - \$50/ton for permanently sequestered CO<sub>2</sub> not beneficially used
    - \$10/ton for CO<sub>2</sub> permanently sequestered and beneficially reused
    - 20-year term



# Proposed CCUS Incentives

- Heitkamp Bill
  - “Contract for differences” – variable price support for CCUS based on price of oil
  - 30% tax credit for sequestration costs
  - 25% of DOE loan guarantees to coal
  - Clean Energy Coal bonds (tax credits for sequestration and efficiency)
  - Revise DOE coal R&D programs
  - CCS risk management proposal
- Industry Tax Credit Proposal

## Barriers

"So if somebody wants to build a coal-powered plant, they can; it's just that it will bankrupt them because they're going to be charged a huge sum for all that greenhouse gas that's being emitted."

- *Candidate Barack Obama, 2008*

"[H]uge swaths of other industries that once might have been right there with the US Chamber of Commerce and coal companies in fighting new regulations are now competing to have the greenest image."

- *Boston Globe, August 6, 2015*

## Policy Barriers

- UIC Class VI rule (non-EOR)
  - Overly stringent requirements
  - EPA regulates, not States
    - EPA has yet to delegate authority to a single State
- New Plants – 111(b) rule
  - 111(b) – New coal required to use CCS partial capture (1,400 lbs./MWh)
  - GHG reporting under Subpart RR even in oil and gas formations

## Policy Barriers

- Existing Plants - Clean Power Plan (111(d) rule)
  - Will force shut down or scaled back dispatch of coal
    - Who will invest in CCS for scaled-back use?
  - GHG reporting under Subpart RR even in oil and gas formations
    - EPA usurps State control of natural resource law



## Legal Issues with 111(d) Rule

- Improper emission reduction assumptions
  - “Building blocks” assume unrealistic reductions
- Section 111/112 Issue
- Incentive Program
  - EPA has no authority to establish special incentives for construction of wind and solar in low-income communities

## Legal Issues with 111(d) Rule

- “Outside the fence line” regulation
  - “best system of emission reduction . . . adequately demonstrated”
- Improper emission reduction assumptions
  - “Building blocks” assume unrealistic reductions
- EPACT '05 restriction
- Section 111/112 limitation -
  - EPA may only require standards of performance for an air pollutant “which is not . . . emitted from a source category which is regulated under [section 112] of this title.”

## 111(d) Rule Seeks to Exponentially Expand EPA's Role

- EPA becomes the supreme energy regulator
  - Dispatch order now becomes a function of environmental regulation, not energy regulation.
- EPA requires that State regulators order remedies they are not authorized to require
  - Environmental dispatch
  - Ordering purchase of renewables
  - Ordering use of third-party generation generally

## National Coal Council

- “Policy parity”
- “Urgent need for numerous commercial demonstration units”
- Parity is in comparison with the subsidies, incentives, mandates applicable to renewables
- DOE favorable to advancing CCS in international climate talks