Carbon Markets and the Clean Power Plan

Chance for a real market?

Kevin Leahy - Environmental & Energy Policy Director

EPRI-IEA Future of GHG Trading in North America

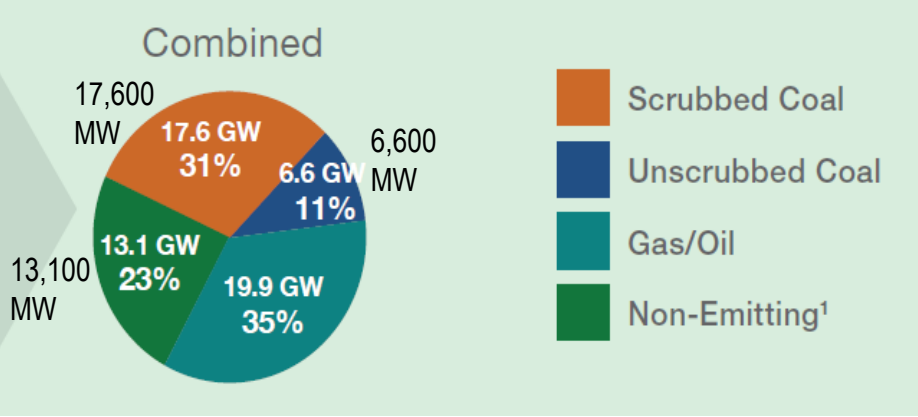
Sept. 30, 2015

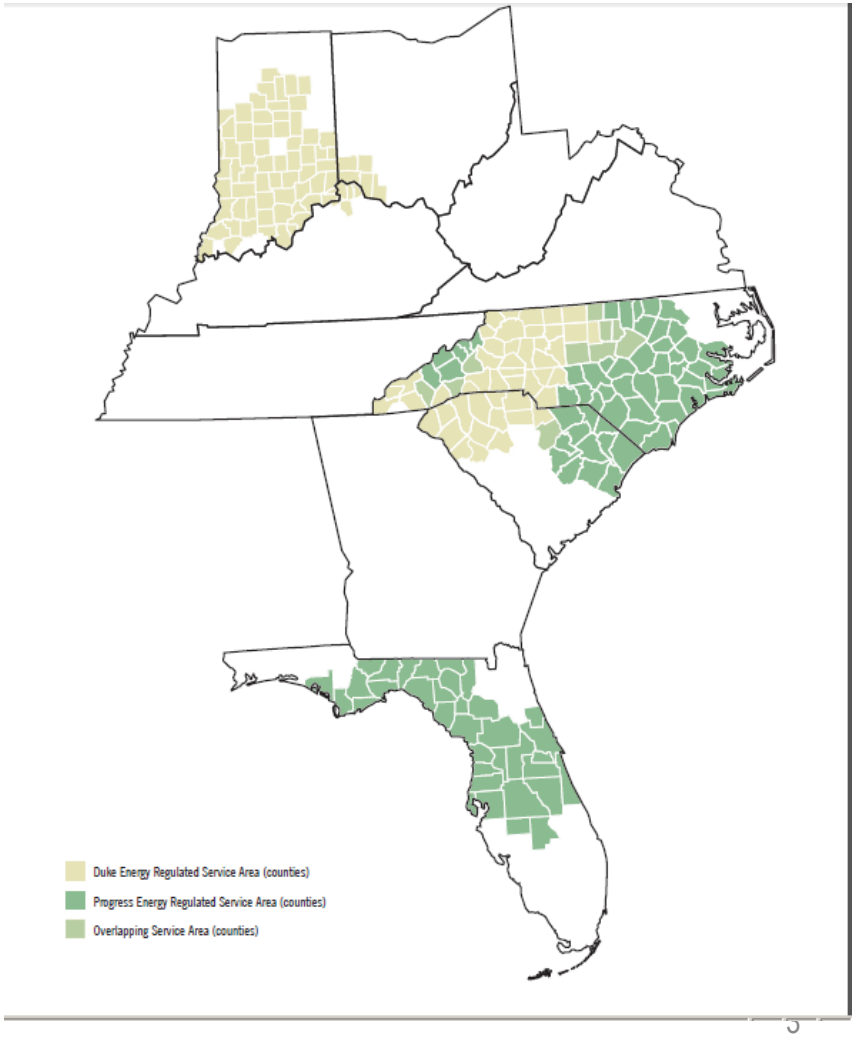
Disclaimer

- Speaking for myself – not Duke Energy
- In some instances numbers are approximations and some data is old.
- Translating from other's work to put forward the generalized views.
- Before citing anything – go to original sources.

What is Duke Energy?

- Serve 22 million people
- 57,700 MW in US
- 4,900 MW in Latin America
- 29,250 employees
- $100 B of assets





Duke Energy Renewables

Wind

- Business model: develop/acquire, build, own and operate utility-scale wind power facilities throughout the U.S.
- 19 operating facilities totaling 1,627 MW

Solar

- Business model: develop/acquire, build, own and operate solar projects throughout the U.S.
  - Primary focus on utility-scale PV projects
  - Also distributed-scale projects through INDU Solar Holdings joint venture with Integrys Energy Services
- 32 operating facilities totaling 189 MWac (net)

And lots of Energy Efficiency

Challenges

- State regulators' understanding of markets
- Mass based = emissions trading
- Rate base = trading of Reduction Credits
- Cap and Trade hangover – political casualty
  - Budget and Trade
  - Emissions Trading
- Linking mass and rate looks impossible (EPA discourages)
- Legal Challenges
- Trading great – however …
  - "winners and losers" language
  - "wealth transfer"
- Extent of California or RGGi influence
  - California – trust market or policies?
  - RGGI understanding re how markets incentivize (auction/subsidy)

Re Winners and Losers

- Modeling underway
- Some States may be nearly compliant

Implications for trading with States with more stringent targets

Assumption: CO2 price increases = loser

CO2 Price goes up … money flows in?

- Electricity price increases, non-energy employment less than otherwise
- More capital investment in your territory
- More employment in energy
- More tax base from energy

CO2 Price goes down … money flows out?

- Electricity price -> less increase, less change in employment in non-energy sector
- Less Capital investment in energy
- Less employment (in energy sector)
- Less tax base (in energy sector)

What happens to power flows and fuel purchases?