

# Greenhouse Gas Reporting Requirements

Georgia Environmental Conference

Aaron Mitchell

August 23, 2012



A SOUTHERN COMPANY

# EPA GHG Rulemaking Overview

- 2009 GHG “Endangerment” Finding
- 2009 GHG Reporting Rule
- 2010 “Tailoring” Rule
- 2011 Auto CAFE Standards
- 2012 New Plant Performance Standards

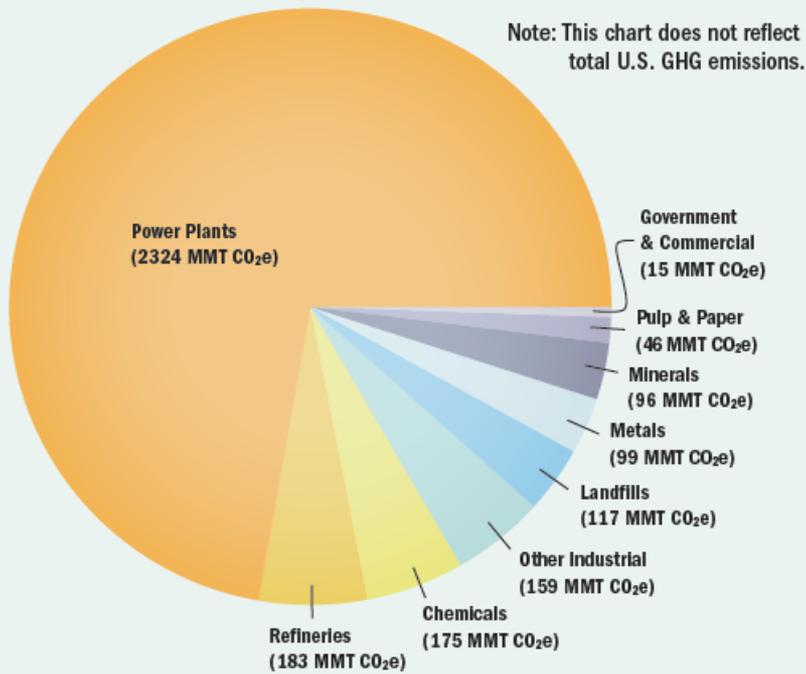
# Georgia Power's GHG Reporting History

- Georgia Power began disclosing its carbon dioxide emissions to EPA in 1995 for all Acid Rain-affected units.
- Voluntarily reported CO2 emissions to the DOE from 1994-2005
- Greenhouse gas data for 2010 published in the company's Corporate Responsibility Report and 10K.
- Southern Company also reports greenhouse gas emissions through the Carbon Disclosure Project.

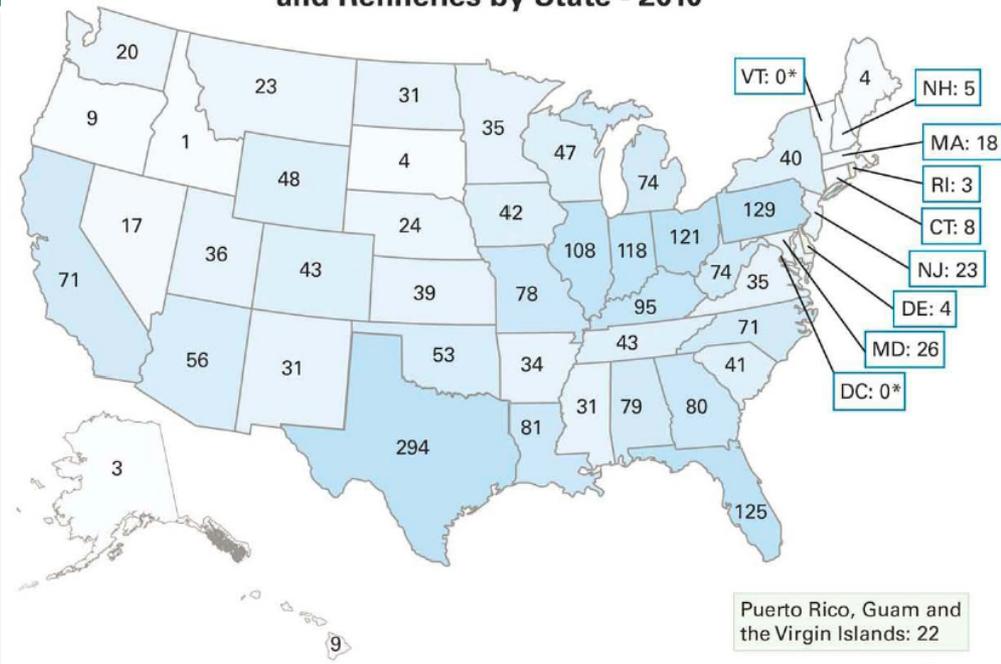
# Media & Public Focus on “Big” Plants

In January 2012, EPA released the first U.S. Greenhouse Gas Inventory Report, reporting GHG emissions in 2010.

**Breakdown of Reported GHG Emissions from Stationary Sources by Industry Type - 2010**



**Total Reported GHG Emissions (MMT CO<sub>2</sub>e) by Power Plants and Refineries by State - 2010**



# Media & Public Focus on “Big” Plants

“An Associated Press analysis of the data showed that Juliette, Ga., power plant **Scherer** produced the highest amount of emissions in the country in 2010, with almost 23 million metric tons of carbon dioxide. Cartersville, Ga., plant **Bowen** produced slightly more than 21 million metric tons, AP said. Both are owned by Southern Co.”

– *Power Plants, Texas Topped GHG Sources In 2010: EPA, Law360* (January 12, 2012)

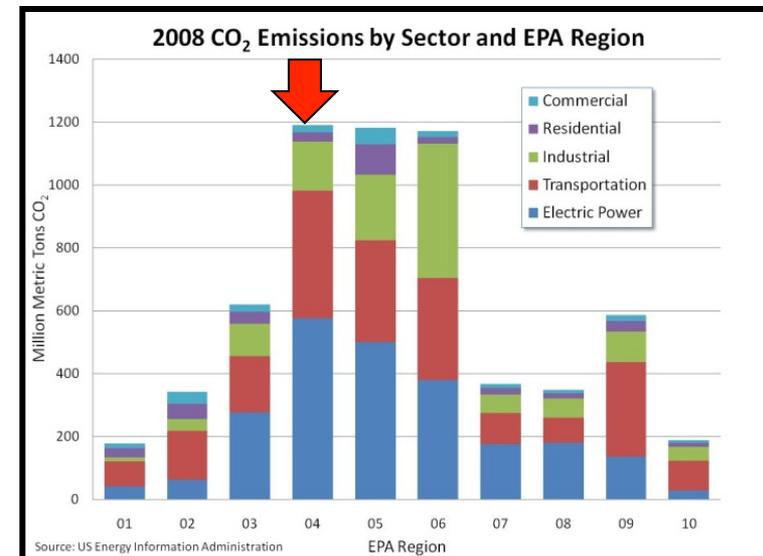
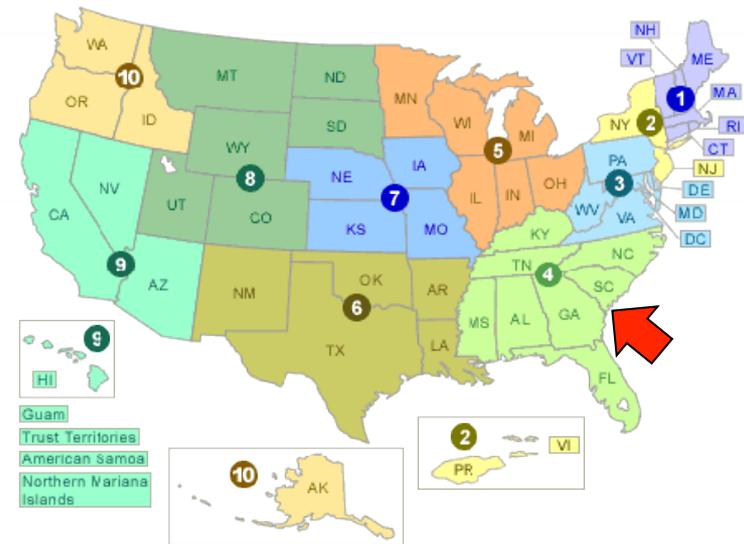
“If coal is king, Plant Bowen is its castle. ... Southern Co. owns the top three carbon-emitting plants in the country -- the others being Plant Scherer, which is also in Georgia, and the James H. Miller Jr. Plant in Alabama, according to EPA data compiled by Eric Schaeffer's group [Environmental Integrity Project]. **To the utility's credit, Schaeffer said, its plants emit less CO2 per megawatt than many smaller plants.**”

– *As carbon regs loom, coal feels weight of its crown, Greenwire* (Sept. 29, 2009)

# Key Facts about Southeastern U.S. (EPA Region 4)

- Home to 20% of the population
- Generates 23% of electricity in U.S. (using coal as the primary fuel source)
- Produces about 25% of U.S. CO<sub>2</sub> emissions from electricity production
- We use more fuel and drive more miles than any other Region

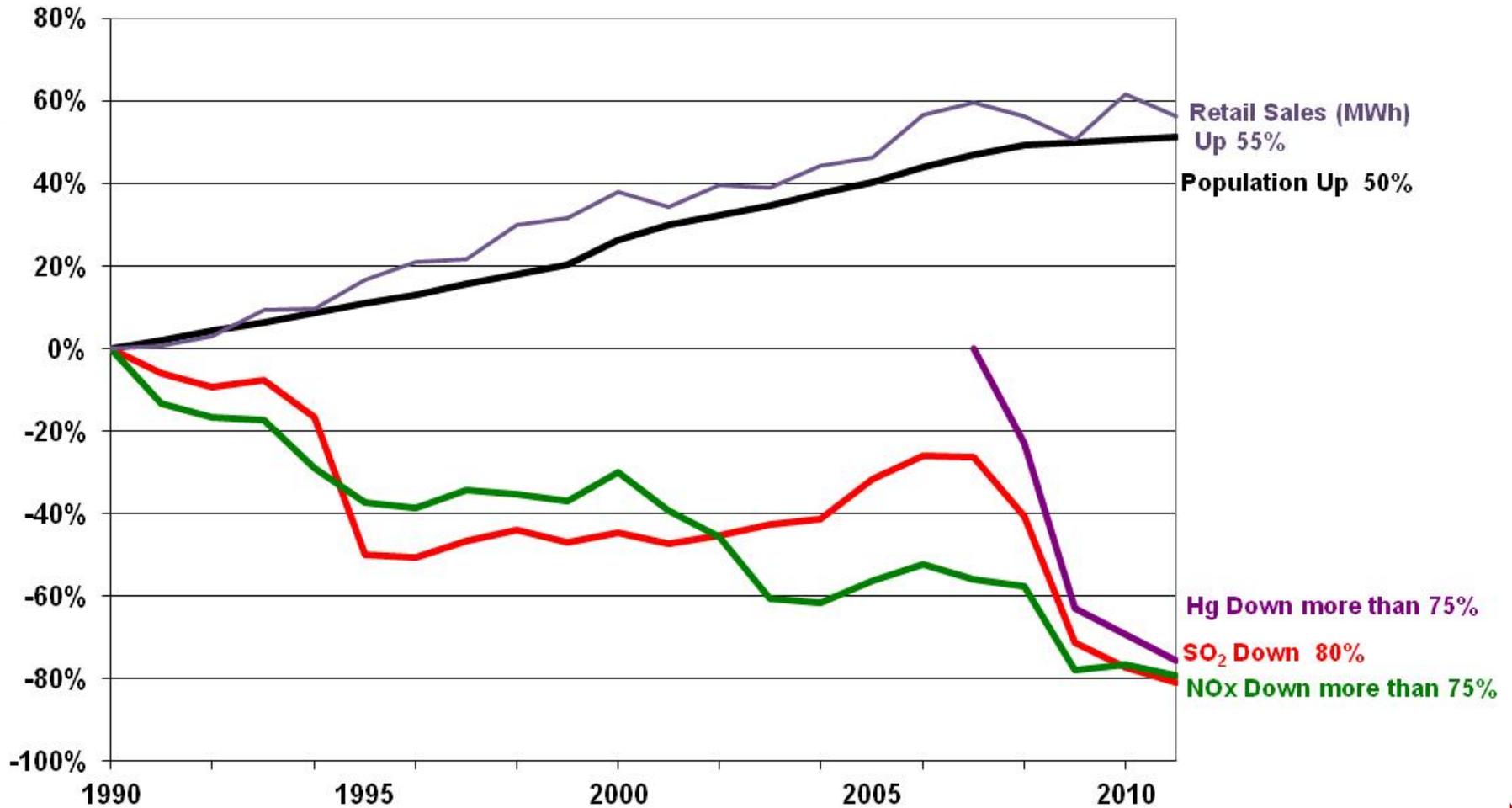
*These attributes translate into significant energy demand that utilities like Georgia Power are required by law to serve.*



# Media & Public Focus on “Big” Plants

- According to EPA’s data, Southern Company’s plants Scherer, Bowen, and Miller are the nation’s top power plant emitters of greenhouse gases for 2010.
- These emissions are indicative of those plants being among the nation’s largest generators of electricity.
  - In 2010, each of these plants emitted more than 20 million metric tons of CO2 equivalent,
  - However they also each generated over 20 million megawatt hours of energy -- enough to power approximately 2 million residential homes.

# Georgia Power Emission Trends



# GHG Emissions

- Georgia Power and Southern Company are committed to action to reduce greenhouse gas emissions, and are industry leaders in researching and developing new technologies
- At the same time, we believe there is an increasing the role of energy efficiency
- We are at the forefront of the technological development needed to serve economic growth and growing electrical demand.
- The focus of this effort must be on developing and deploying technologies that reduce greenhouse gases while making sure that electricity remains reliable and affordable.

# Plant Vogtle Units 3 & 4:

- Virtually no air pollutant emissions
- 1,117 MW per new unit, bringing the facility to a total of more than 4.6 GW
- Owned by Georgia Power, Oglethorpe Power, MEAG, and Dalton Utilities

This artist rendering depicts the two new units (Westinghouse AP1000s) at Plant Vogtle.



# Southern Co. Renewable Projects:

## Georgia Power 2015 Large-Scale Solar Initiative

- 49 MW of solar photovoltaic resources

## SunEdison-Apex Solar Project (20 MW)

- 154-acre photovoltaic facility
- 88,000 poly-crystalline solar modules
- North Las Vegas, Nevada (June 2012)

## Cimarron Solar Facility (30 MW)

- 364-acre photovoltaic facility
- 500,000 modules
- Raton, New Mexico (March 2010)

*Joint ventures with Turner Renewable Energy*



# Southern Co. Renewable Projects:

## Nacogdoches Generating Facility (100 MW)

- 100% residual biomass
- bubbling fluidized bed
- complete July 2012

## Other Biomass Projects

- Plant Mitchell Unit 3 biomass conversion
- Gadsden switchgrass & miscanthus co-firing



# Southern Co. Renewable Projects:

Wind: Offshore wind data collection efforts underway in multiple states



Landfill Gas: Escambia County, FL (3.2 MW)



Hydroelectric: 34 facilities, 2758 MW

- up to 5% of company output
- 200,000 acres of lakes and 5,000 miles of shoreline for use by the general public.



# Southern Co. Research & Development:

## Kemper County IGCC

- 582 MW, lignite-fueled plant with 65% CO<sub>2</sub> capture for Enhanced Oil Recovery (EOR); significantly lower NO<sub>x</sub>, SO<sub>2</sub>, Hg emissions as well



# Southern Co. Research & Development:

## Carbon Capture and Sequestration

- Manages and operates the U.S. Department of Energy's National Carbon Capture Center, focusing on carbon capture and sequestration
- Plants Yates, Barry, Daniel, and Gorgas are involved in studies and demonstration projects related to carbon capture and sequestration from pulverized-coal power plants.

