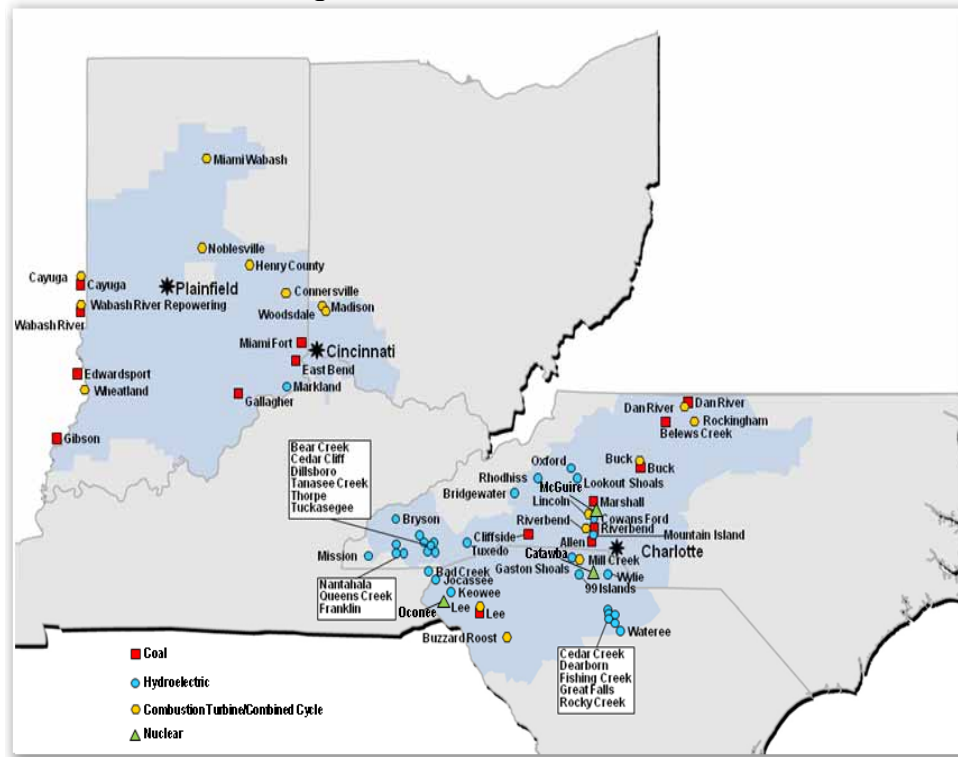




## WHY NUCLEAR? NEW NUCLEAR POWER PLANT DEVELOPMENT

Chris Fallon  
Vice President, Office of Nuclear Development

## Regulated Generation



- Fortune 500 company headquartered in Charlotte, N.C.
- Third largest electric power holding company in the U.S.
- U.S. Franchised Gas and Electric
  - 27,000 MW of owned, regulated generation
  - 48,000 sq. miles of service territory in five states (N.C., S.C., Ky., Ohio and Ind.)
  - 4 million electric customers
  - 520,000 gas customers (Ohio and Ky.)
  - 3 nuclear stations, 7 generating units

### •Commercial Power

- 7,600 MW of owned, unregulated generation (Midwest)
- 700 MW of wind generation in operation and approximately 5,000 MW under development

### •Duke Energy International

- 4,000 MW of generation in Latin America

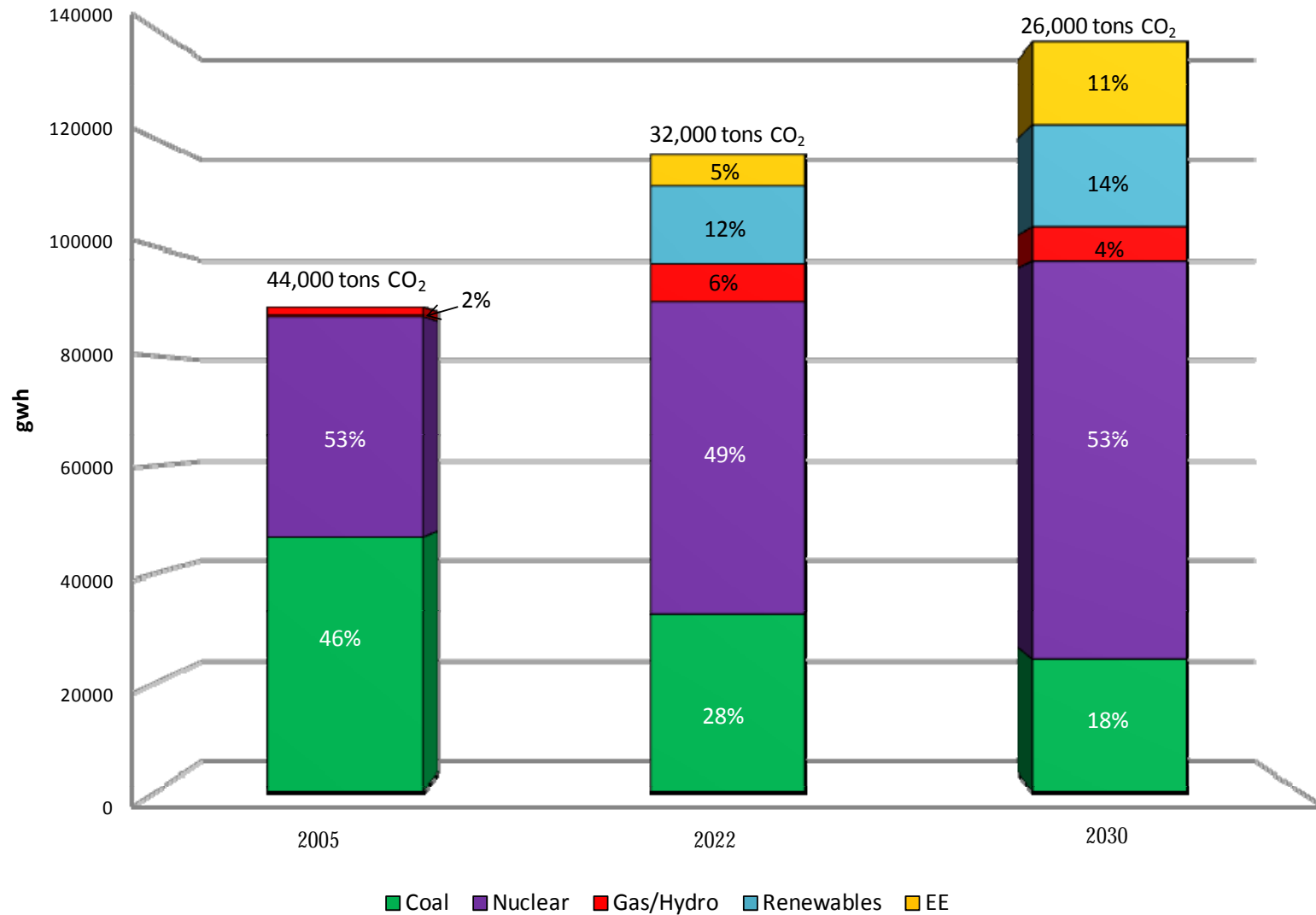
- Westinghouse AP1000 reactor technology
- 2,234 megawatts – two 1,117 megawatt units
- Cherokee County, S.C.
- Project cost ~ \$11B (2008 dollars) + financing costs
- Projected commercial operation date
  - Unit 1 – 2021
  - Unit 2 – 2022



# NEW NUCLEAR DEVELOPMENT: GENERATION BREAKDOWN



## Carolinas Breakdown By Generation Type



### Modernization

- Thanks to large capital investments made decades ago, Duke Energy Carolinas' customers enjoy rates significantly below (>30 percent) the national average
- Duke Energy Carolinas completed its last new baseload project in 1986. Since then:
  - Annual native load consumption has increased by roughly 45 percent
  - Peak native load demand has increased by roughly 5,800 MW (~55 percent increase)

### De-carbonization

- The addition of two nuclear units would reduce Duke Energy Carolinas' carbon emissions by roughly 35 - 40 percent

### Lower cost to customers

- Fuel savings: \$400MM-\$500MM/year by 2022 (benefits likely to grow with inflation)
- CO2 emissions cost savings would be roughly \$800MM by 2022 and \$1.4BN by 2030
- Annual operational savings outweigh investment recovery by 5<sup>th</sup> year of full operation
- Total cost of nuclear portfolio plan greater than 10 percent less than alternate resource plan

### Job creation

- 1,400-1,800 jobs during construction, 400-700 permanent jobs during operation (estimates based on industry averages)
- Equivalent number of support jobs in surrounding region

# NEW NUCLEAR DEVELOPMENT: WHY NUCLEAR?



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## Nuclear Fleet Performance

- 2009 Duke Energy capacity factor = **94.34 percent**
  - 10th consecutive year with capacity factor greater than **90 percent**
- 2009 Duke Energy operating costs = \$19.33/megawatt hour
  - Ranked first in operating costs in 2009 (of U.S. nuclear fleets)

<sup>1</sup> Based on bids to Duke Energy Carolinas Renewable RFP. Capacity factor of bids ranged from 18% - 25%. Does not include firming costs.

<sup>2</sup> No viable wind bids for Carolinas. Prices based on Duke's experience in Midwest. Price does not include transmission integration costs (~\$10/Mwhr) or transmission wheeling costs (~ \$5-\$10/Mwhr). Does not include firming costs.

Supportive state regulatory frameworks are needed to ensure access to attractive financing during the cash-intensive nuclear construction period.

- Critical components include:
  - Pre-approval of construction costs and schedule
  - Periodic reviews of costs and schedule compliance
  - Cash return on CWIP outside of general rate case
  - No “look-back” on approved spending
  - Assurance of recovery of approved investment if forced to abandon project
  - Inclusion of completed plant in rates without general rate case