Generation Planning Overview

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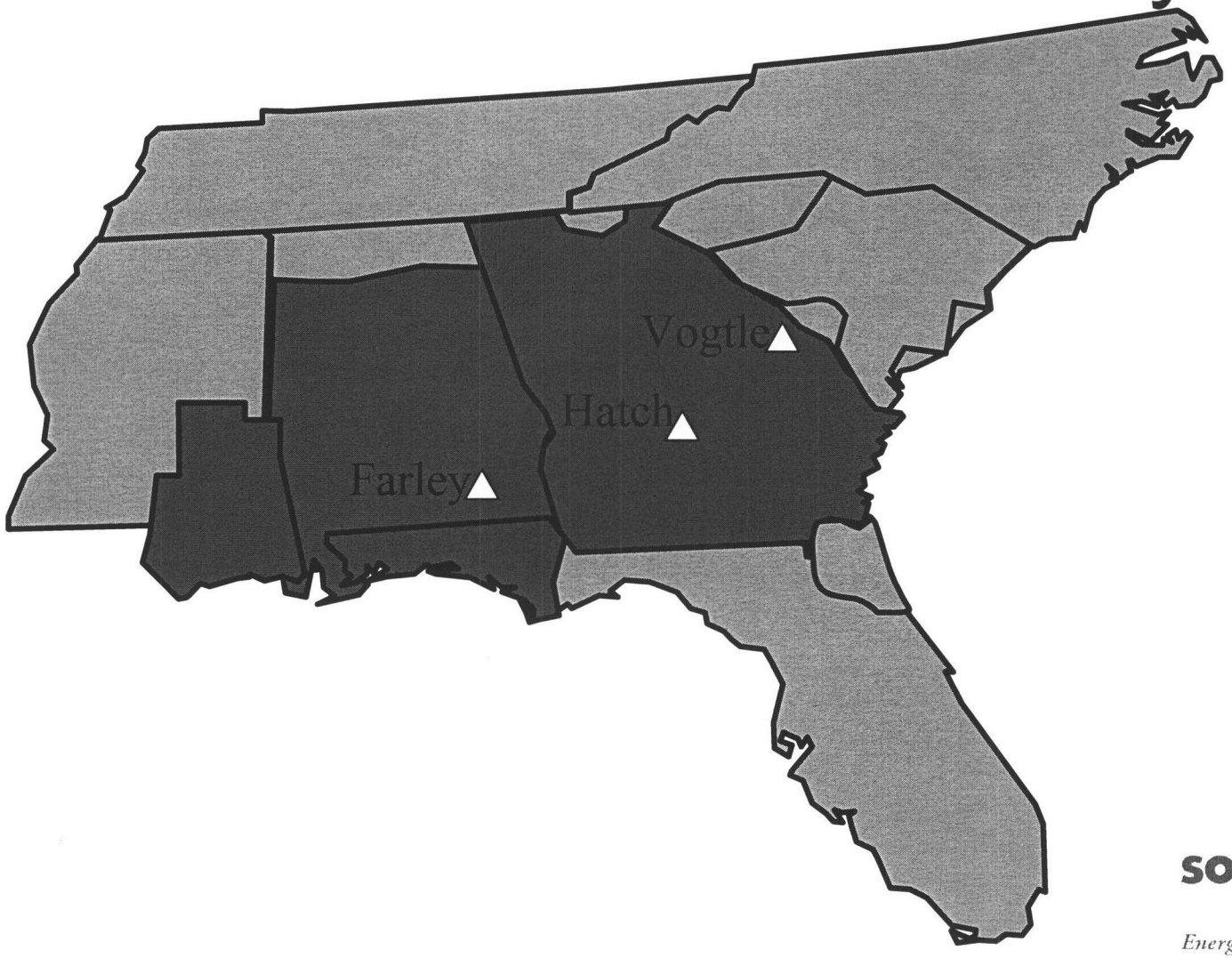
SOUTHERN COMPANY
Energy to Serve Your World®

Southern Service Territory



SOUTHERN COMPANY

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Southern Company Generation Planning

- Southern Company routinely (at least annually) updates it's generation capacity need forecast
- This process is commonly referred to as Integrated Resource Planning, or the "IRP"
  - Each state jurisdiction has different requirements for filings and updates

Southern Company Generation Planning *Process*

- The starting point is the existing inputs:
  - Load forecast
  - Fuel forecast
  - Current generation fleet assumptions (capacity, heat rate, maintenance schedules, unavailability, resource changes, delivered fuel price, emissions, etc.)
  - New technology forecast (generic-not site specific), including cost and performance parameters
  - Reserve margin requirement
  - Demand-side management programs
  - Regulatory requirements (e.g., environmental)

Southern Company Generation Planning *Process* (con't)

- The Southern System performs a "mix analysis" to determine a least-cost generation expansion plan for the future (typically at least 20 years)
  - The mix analysis looks to match supply with demand over the time period by considering numerous expansion combinations to find the most economic future generation mix.
  - For example, the system requires an additional 10,000 MW over a given period of time. The model is loaded with several viable technology choices over the given time period
    - Gas (CC or CT)
    - Coal (conventional or IGCC)
    - Nuclear
    - Renewables
  - Consideration is given to the time required to put baseload generation on line
    - Baseload fossil generation – 6 to 8 years
    - Baseload nuclear generation – currently 10 years; as process matures 7 – 8 years

Southern Company Generation Planning *Process* (con't)

- The model, using a technique called dynamic programming, solves to determine the least-cost expansion plan over the specified time period.
- The output would consist of the amount and type of generation added by year. It also includes the "objective function", which is the compilation of fixed and variable costs on an NPV basis for the least-cost plan.
- This forms the Base Plan.

Southern Company Generation Planning *Process* (con't)

- For specific applications, the base plan is compared to the actual site-specific alternatives for selecting the next resource addition
- Numerous sensitivities are performed to measure alternative scenarios, including fuel, environmental, technology costs and load forecast
- This would include the total life-cycle cost, including transmission costs

Southern Company Generation Planning *Process* (con't)

- The two primary ways to add generation resources in our retail jurisdictions:
  - Competitive RFP; execute PPA with a counterparty
  - Self-Build; utility builds unit and places it into rate base