

Inter-Regional Planning in the Southeast

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Southern Company Transmission

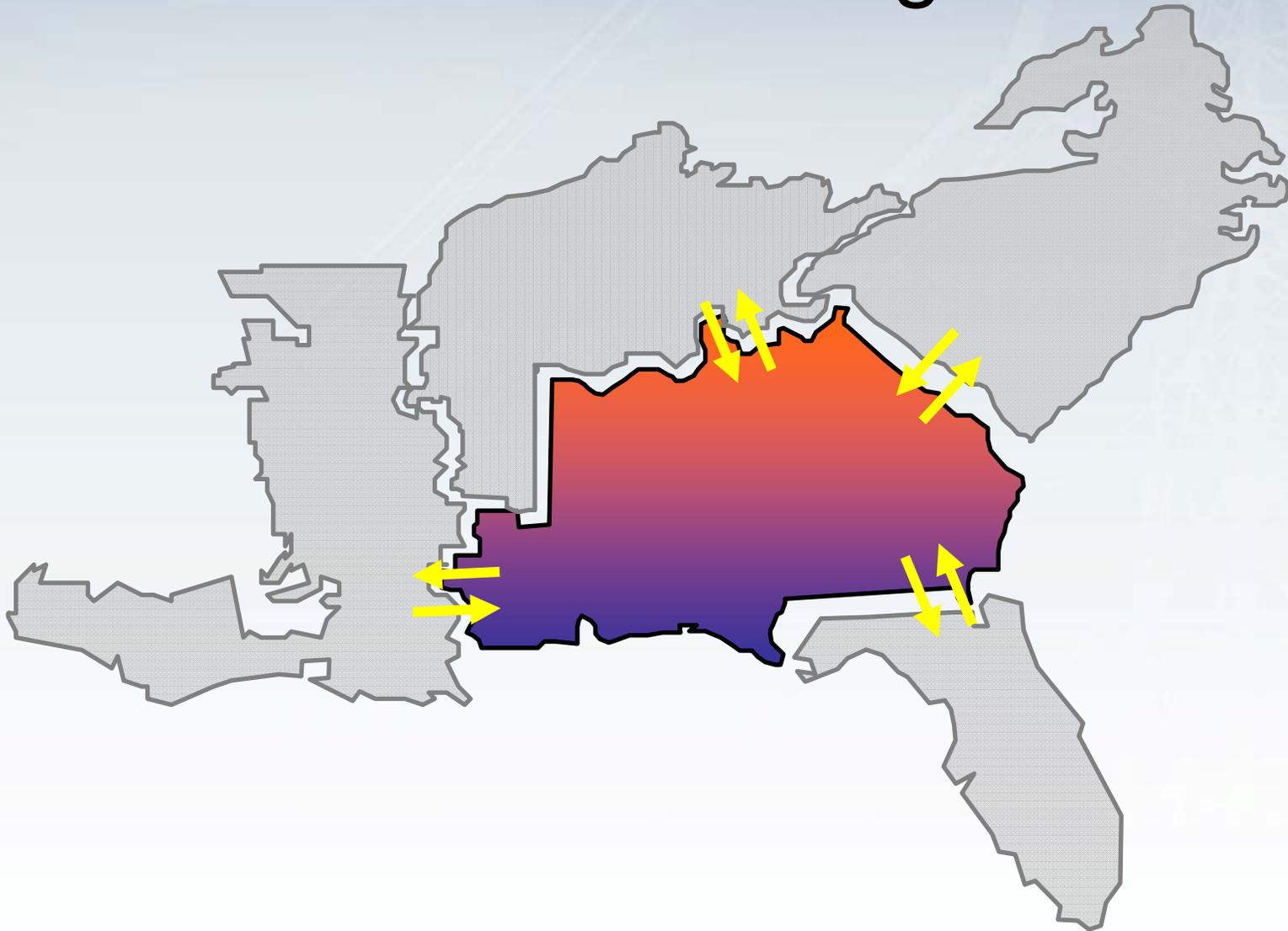


Ron Carlsen
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Southern Company Transmission
March 26, 2009

Inter-Regional Planning in the Southeast

- Planning Activities in the Southeast
 - Southeastern Regional Transmission Planning Process
 - Southeast Inter-Regional Planning Process
- 2006 DOE Congestion Study
- Current and Future Coordination Activities
- Southern Company – Clean Energy Programs

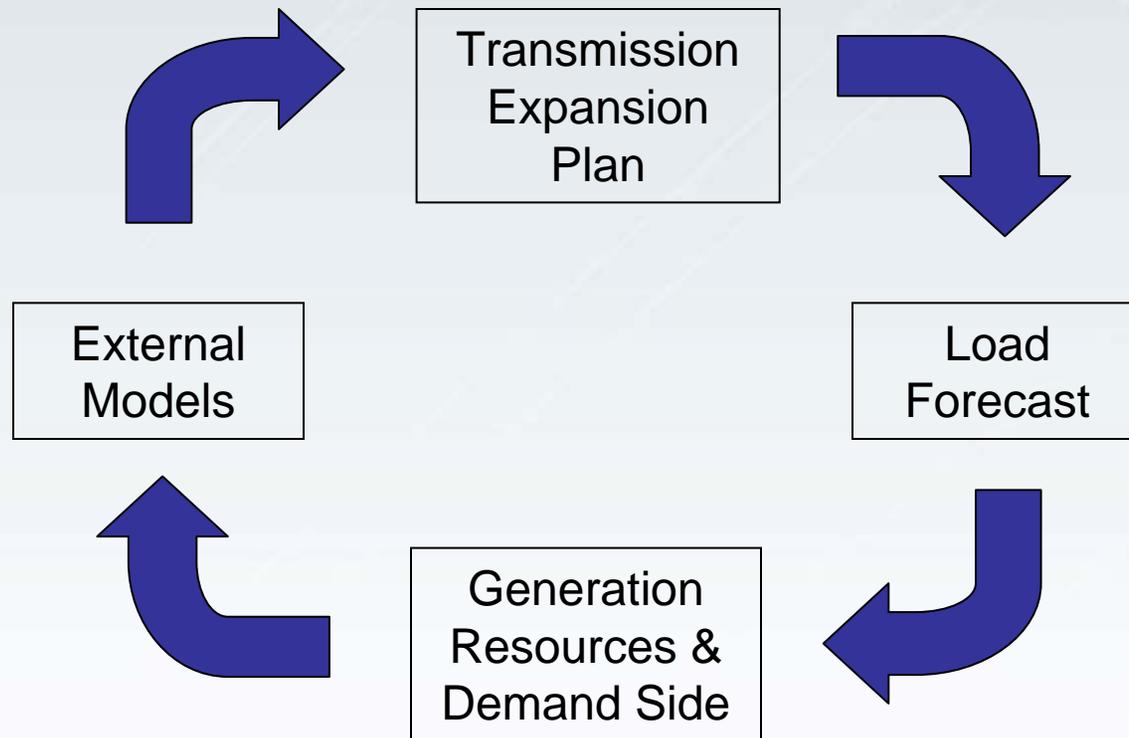
Southeastern Regional Transmission Planning Process



Southeastern Regional Transmission Planning Process

- Sponsors:
 - Georgia Transmission Corporation
 - Municipal Electric Authority of Georgia
 - South Mississippi Electric Power Association
 - PowerSouth Electric Cooperative
 - Dalton Utilities
 - Southern Company
- Coordinated annual planning efforts with stakeholders
- Analyses of stakeholder submitted Economic Studies

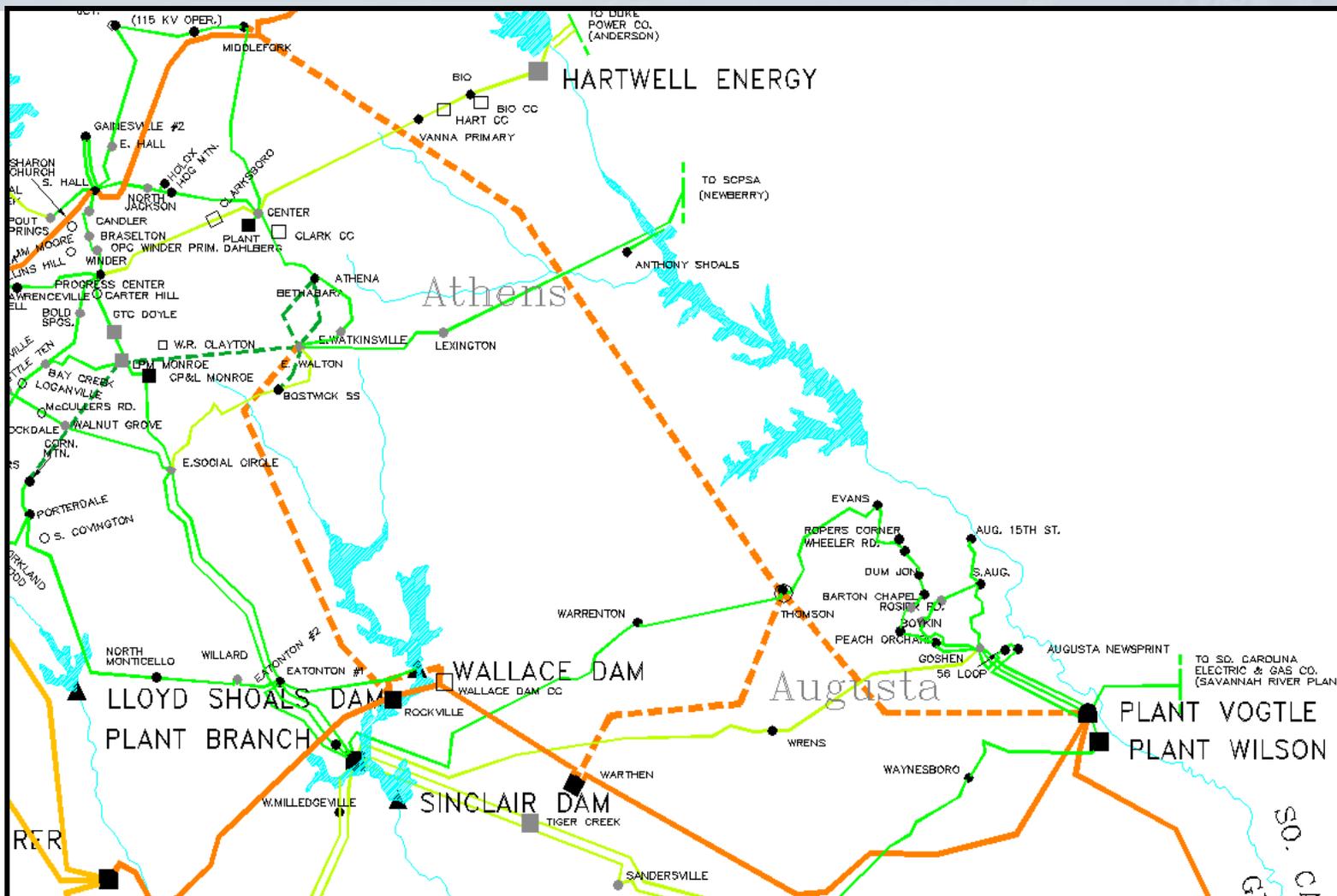
Southeastern Regional Transmission Planning Process



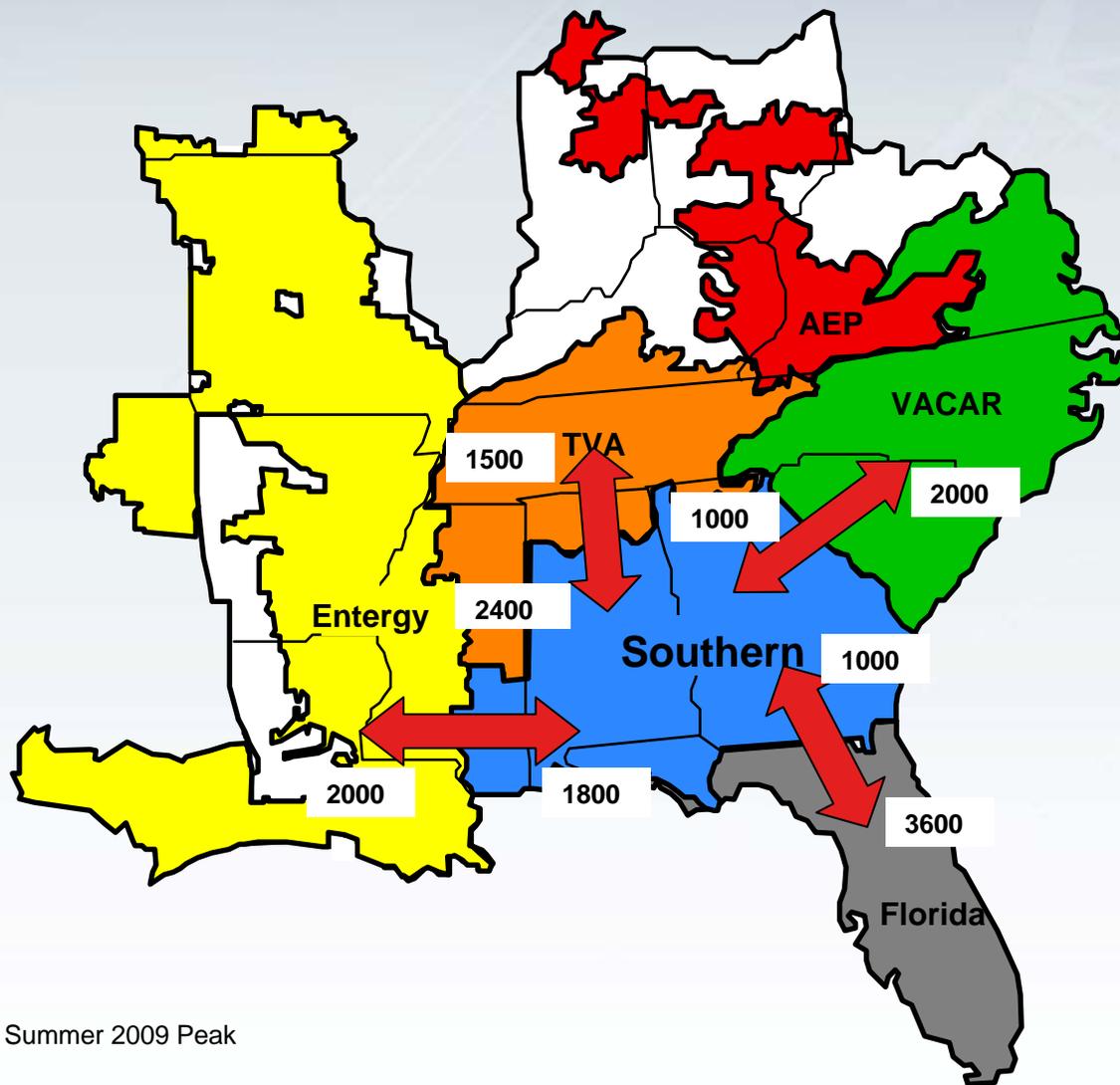
Southeastern Regional Transmission Planning Process

- 2008 SRTP Highlights
 - Development of Region's 10-year Transmission Expansion
 - Included construction of ~250 miles of 500 kV
 - Completion of stakeholder requested Economic Studies:
 - Mobile, AL to Atlanta 1000 MW
 - Alabama to Florida 1000 MW
 - Entergy to Alabama 1000 MW
 - GA ITS to SCEG/SC 1000 MW
 - Entergy to GA ITS 2000 MW

Southeastern Regional Transmission Planning Process

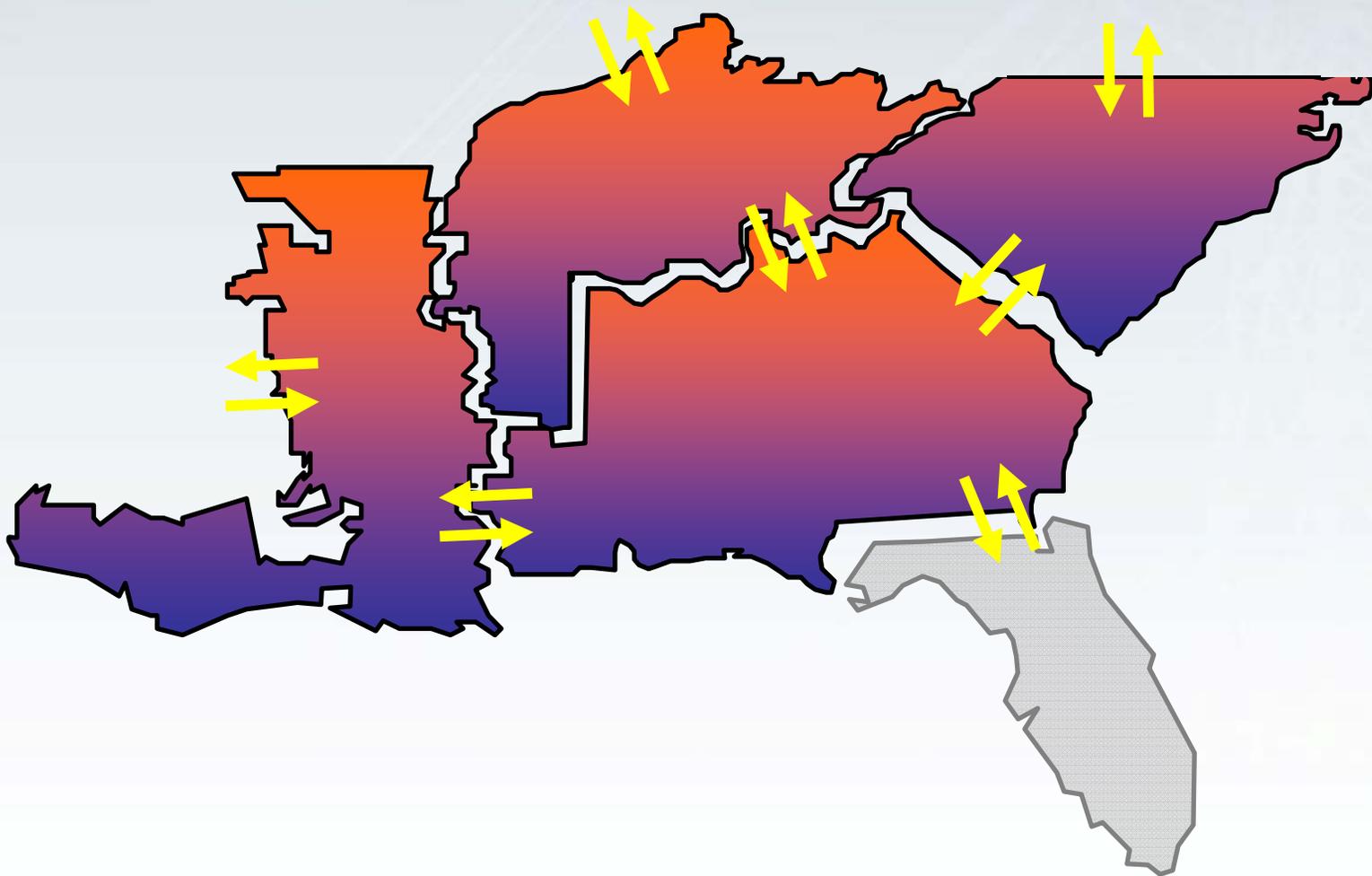


Southeastern Regional Transmission Planning Process



Obtained from OASIS – Summer 2009 Peak

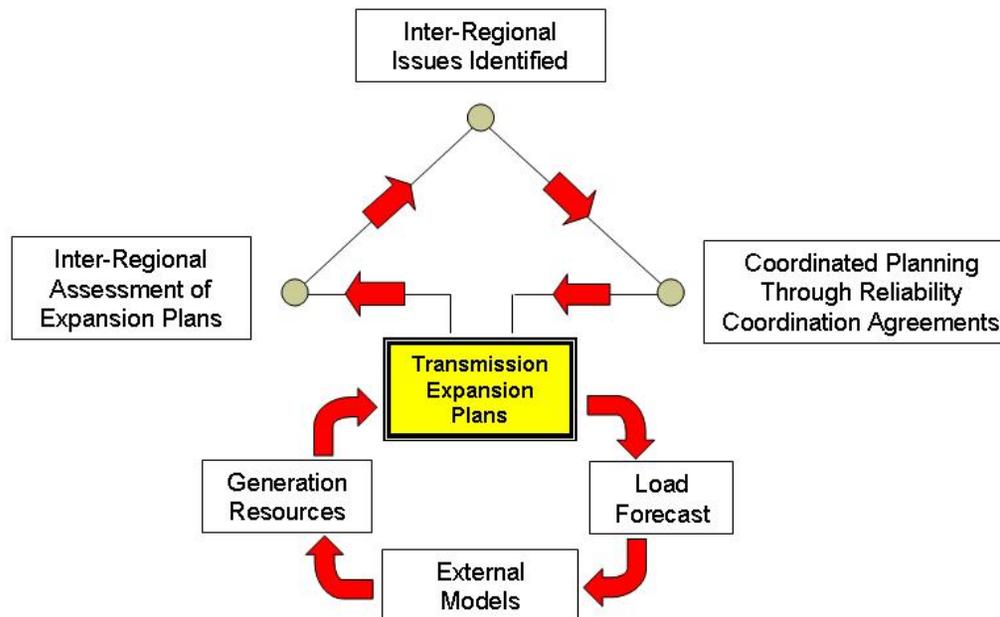
Southeast Inter-Regional Participation Process



Southeast Inter-Regional Participation Process

- Sponsors:
 - Georgia Transmission Corporation
 - Municipal Electric Authority of Georgia
 - South Mississippi Electric Power Association
 - PowerSouth Electric Cooperative
 - Dalton Utilities
 - Duke Energy Carolinas
 - Progress Energy Carolinas
 - Entergy
 - TVA
 - E.ON U.S.
 - Santee Cooper
 - South Carolina Electric & Gas
 - Southern Company
- Supplements Sponsor's Regional Planning Processes
- Analyses of stakeholder submitted Economic Studies

Southeast Inter-Regional Participation Process



Southeast Inter-Regional Participation Process

- 2008/9 SIRPP Highlights
 - Stakeholder requested Economic Studies:

• SPP to Southern	5000 MW
• PJM Classic to Southern	2000 MW
• Southern to PJM Classic	3000 MW
• PJM West/MISO to Southern	2000 MW
• Entergy to GA ITS	2000 MW

2006 DOE Congestion Study

- Identified Southeast Nuclear Expansion as a potential Conditional Congestion Area
 - Joint studies conducted between Transmission Owners
 - Enhancements identified to support Nuclear Expansion
 - SERC LTRA - Nuclear expansion in the Southeast
- Southern-Florida interface limits
 - Studies conducted to expand interface above existing 3600 MW
 - Recent study provided means to expand interface to 5100 MW

Current and Future Coordination Activities

- Bottom – Up Process
 - LSEs load growth and resource decisions
 - Transmission Service obligations
 - Transmission Expansion
 - Coordination with neighboring Transmission Owners and Planning Processes to identify Optimal Solutions
 - Inter-Regional Reliability Assessments

Southern Company

Clean Energy Programs

- Well established Demand side programs
 - Expanding Demand side programs and build supporting infrastructure
 - 1 millionth SmartMeter installed in February
 - 4.4 million meters installed by 2012
- Pursuing balanced portfolio of renewable and low carbon options
 - Substantial existing hydro and pumped storage
 - Biomass
 - Mitchell conversion 2012
 - Studying re-powering and dedicated biomass plants at several other sites
 - Solar
 - Solar PV demonstration projects in Georgia & Alabama
 - Solar augmented steam cycle study with EPRI
 - Demand side solar – water heating
 - Wind
 - Offshore wind and wind imports continue to be evaluated for competitiveness
 - Existing transmission capability to support modest levels of imports today, especially during off-peak
 - Nuclear
 - Vogtle 3 & 4 (2016/17)
 - Proposed IGCC plant with 50% carbon capture – Mississippi
 - Transmission Expansion planned to accommodate the output of these resources without congestion

Renewable Energy Technology Program

Projects

- Completed
- In progress
- Under development

- Small wood chips co-firing tests Gadsden
- Switchgrass co-firing
- Biomass re-powering study
- "Brownfield" study of new biomass power plant

- Renewables SmartGrid study
- Biomass gasification transport reactor)
- Biodiesel from algae study
- Solar augmented steam cycle study
- Biomass gasification technology survey

- Biomass re-powering study
- Biomass co-firing tests

- Wind turbine maintenance cost study (EPRI & TVA)

- Low speed wind turbine study

- Wind meteorological tower

- Biomass co-firing tests (SCR catalyst deactivation)

- Biomass co-firing tests

- Small-scale biodiesel firing tests

- Biomass cogen study

- Biomass re-powering study

- Biomass cogen study

- Small wood chips co-firing tests
- "Brownfield" study of new biomass power plant

- Offshore wind feasibility study (GaTech)

- Biomass re-powering study

- Cementitious uses for biomass ash-coal ash mixtures

- Ocean wave & tidal study

- Solar PV demo GPC Bldg.

- Biomass co-firing tests

- Switchgrass cubes co-firing tests Mitchell
- Biomass direct injection feasibility study
- Biomass re-powering study

- Solar PV and water heating demo

- Biomass re-powering study

- Plasma gasification pilot plant

- Solar water heating demos all OpCos

- Case studies of state RPS
- Study of southeast renewable resources

