

South Carolina Regional Transmission Planning Stakeholder Meeting

WebEx

May 5, 2020 10:00 AM – 12:00 PM

Purpose and Goals for Today's Meeting

- Review Economic Transmission Planning Principles
- Review past Economic Power Transfer Studies
- Identify Economic Power Transfer Sensitivities to be Studied
- Review Regional Planning Process Timeline
- Discussion on Multi-Party Assessment Studies

Economic Transmission Planning Power Transfer Sensitivities

Scott Parker

Economic Transmission Planning Principles

The purpose of Order 890's Economic Transmission Planning Principle is to:

- ensure that customers may request studies that evaluate potential upgrades or other investments that could reduce congestion or integrate new resources and loads on an aggregated or regional basis
- allow customers, not the transmission provider, to identify those portions of the transmission system where they have encountered transmission problems due to congestion or whether they believe upgrades and other investments may be necessary to reduce congestion and to integrate new resources

Economic Transmission Planning Principles

(continued)

- allow customers to request that the transmission provider study enhancements that could reduce such congestion or integrate new resources on an aggregated or regional basis without having to submit a specific request for service

This approach ensures that the economic studies required under this principle are focused on customer needs and concerns

Economic Transmission Planning Sensitivity Selection

- All requested sensitivities will be considered except sensitivities that specify specific generation resources
- Up to 5 sensitivities will be identified for study
- If more than 5 are requested, Stakeholder voting members will vote to select the top five
- Sensitivities that are not selected by the voting process as one of the 5 studied sensitivities will be studied only if the requestor(s) pays for the additional study efforts

Economic Transmission Planning Sensitivity Selection

- SCRTP economic power transfer sensitivity studies will identify congestion and required improvements only inside the SCRTP footprint

Stakeholder Group Sectors

- Transmission Owners/Operators
- Transmission Service Customers
 - PTP and Network
- Cooperatives
- Municipals
- Marketers
- Generation Owners/Developers
- ISO/RTO
- State Regulatory Representatives

Current Voting Stakeholder Group Members

- Cooperatives

John Boyt, Central Electric

Vacant

- Municipals

Alan Loveless, City of Georgetown

Vacant

- Network and PTP Transmission Customers

J. W. Smith, Southeastern Power Administration

Vacant

Current Voting Stakeholder Group Members

- Generation Owners / Developers
 - Tim Daniels, Hudson Energy Development LLC
 - Vacant
- Marketers
 - Eddie Folsom, DESC Power Marketing
 - Glenda Horne, Santee Cooper Power Marketing
- Transmission Owners
 - Bob Pierce, Duke Energy-Carolinas
 - Kerry Sibley, Georgia Transmission

Current Voting Stakeholder Group Members

- ISO / RTO
 Vacant
 Vacant

Economic Transmission Planning Power Transfer Sensitivities

Sensitivities Selection

Scott Parker

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2014	Duke Energy Carolinas (DEC)	Santee Cooper	2015 Winter	250 MW
2014	Offshore Wind Injection (115 kV)	Santee Cooper/SCE&G	2019 Winter	300 MW
2014	Southern Company	SCE&G	2015 Summer	300 MW
2014	SCE&G	Duke	2019 Summer	200 MW
2015	Southern Company	SCE&G	2016 Winter	300 MW
2015	Southern Company	SCE&G	2018 Summer	300 MW
2015	Duke Energy Carolinas (DEC)	SCE&G	2018 Summer	200 MW
2015	Southern Company	SCE&G	2018 Winter	350 MW
2015	Duke Energy Carolinas (DEC)	SCE&G	2018 Winter	250 MW

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2016	Southern Company	Santee Cooper	2017 Winter	500 MW
2016	Santee Cooper	GTC	2017 Summer	200 MW
2016	Santee Cooper	GTC	2017 Winter	200 MW
2016	Santee Cooper	CPL (DEP)	2017 Winter	300 MW
2016	Southern Company	Santee Cooper/SCE&G	2020 Summer	500 MW
2017	Duke Energy Carolinas (DEC)	SCE&G	2021 Summer	300 MW
2017	Southern Company	SCE&G	2020 Summer	300 MW
2017	Southern Company	SCE&G	2021 Winter	300 MW
2018	Southern Company	Santee Cooper	2022 Summer	1000 MW
2018	Santee Cooper	Duke Energy Carolinas	2022 Summer	1000 MW
2018	Duke Energy Carolinas	Santee Cooper	2022 Summer	1000 MW

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2019	SOCO	DESC	2020 Summer	500 MW
2019	DEC	SCPSA	2020 Summer	500 MW
2019	SOCO	SCPSA	2020 Summer	800 MW
2019	DEC	SCPSA	2023/24 Winter	500 MW
2019	SOCO	SCPSA	2023/24 Winter	1000 MW

Transmission Planning Base Cases

2019 MMWG and SERC Series

2020 Spring Light Load

2020 Summer Peak

2020/21 Winter Peak

2021 Spring Light Load

2021 Summer Peak

2021/22 Winter Peak

2024 Spring Light Load

2024 Summer Peak

2024 Summer Shoulder

2024/25 Winter Peak

2029 Summer Peak

2029/30 Winter Peak

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #1:	
Source Area:	SOCO
Sink Area:	SCPSA
Transfer (MW):	300
Study Year:	2026/27
Study Conditions:	Winter
Other Information:	GEN-to-GEN; 26/27 SCRTP model; 29/30 coordinated MMWG external model
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #2:	
Source Area:	SOCO
Sink Area:	SCPSA
Transfer (MW):	600
Study Year:	2026/27
Study Conditions:	Winter
Other Information:	GEN-to-GEN; 26/27 SCRTP model; 29/30 coordinated MMWG external model
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #3:	
Source Area:	SOCO
Sink Area:	SCPSA
Transfer (MW):	900
Study Year:	2026/27
Study Conditions:	Winter
Other Information:	GEN-to-GEN; 26/27 SCRTP model; 29/30 coordinated MMWG external model
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #4:	
Source Area:	SOCO
Sink Area:	SCPSA
Transfer (MW):	300
Study Year:	2027
Study Conditions:	Summer
Other Information:	GEN-to-GEN; 26/27 SCRTP model; 29/30 coordinated MMWG external model
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #5:	
Source Area:	SOCO
Sink Area:	SCPSA
Transfer (MW):	600
Study Year:	2027
Study Conditions:	Summer
Other Information:	GEN-to-GEN; 26/27 SCRTP model; 29/30 coordinated MMWG external model
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #6:	
Source Area:	
Sink Area:	
Transfer (MW):	
Study Year:	
Study Conditions:	
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #7:	
Source Area:	
Sink Area:	
Transfer (MW):	
Study Year:	
Study Conditions:	
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #8:	
Source Area:	
Sink Area:	
Transfer (MW):	
Study Year:	
Study Conditions:	
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

2019 Economic Planning Proposed Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions	Requestor
1	SOCO	SCPSA	300	2026/27	Winter	J Miller(Central)
2	SOCO	SCPSA	600	2026/27	Winter	J Miller(Central)
3	SOCO	SCPSA	900	2026/27	Winter	J Miller(Central)
4	SOCO	SCPSA	300	2027	Summer	SCPSA PM
5	SOCO	SCPSA	600	2027	Summer	SCPSA PM
6						
7						
8						



2019 Economic Planning Scenarios

Selected by Stakeholders During the May 5, 2020 Meeting

#	Source	Sink	Amount (MW)	Year	Study Conditions
1	SOCO	SCPSA	300	2026/27	Winter
2	SOCO	SCPSA	600	2026/27	Winter
3	SOCO	SCPSA	900	2026/27	Winter
4	SOCO	SCPSA	300	2027	Summer
5	SOCO	SCPSA	600	2027	Summer

SCRTP Regional and Inter-regional Processes

Scott Parker

SCRTP Regional and Public Policy Planning

- Biennial Process (currently in year 2, Meeting #6)
- Restarts in 4th quarter of even years
- Regional Projects – Proposed, Evaluation and Selection
 - **Must be submitted by January 15 of odd years**
 - None received in current Regional Planning cycle

During this meeting:

- Stakeholders may submit comments on all proposed Regional Projects. Comments must be submitted by June 15. The Transmission Provider will post all comments on the SCRTP website
- The Transmission Providers will review proposed Regional Projects and Stakeholder comments

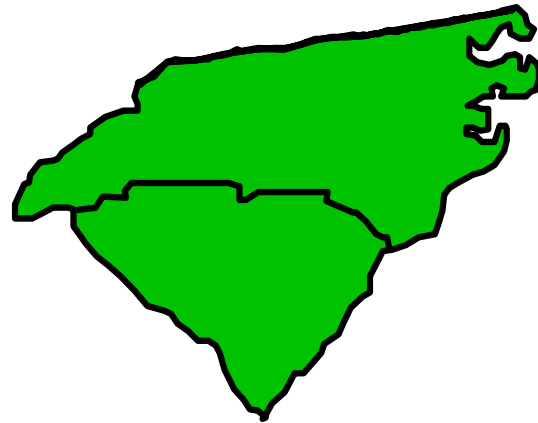
Multi-Party Studies

Jake Biddix

Multi-Party Assessments

- **Carolina Transmission Coordination Arrangement (CTCA)**
- **SERC Reliability Corporation (SERC)**
- **Eastern Interconnection Planning Collaborative (EIPC)**
- **Eastern Interconnection Reliability Assessment Group (ERAG)**

CTCA Future Year Assessments



CTCA Purpose

- **Collection of agreements developed concurrently by the Principals, Planning Representatives, and Operating Representatives of multiple two-party Interchange Agreements**
- **Establishes a forum for coordinating certain transmission planning assessment and operating activities among the specific parties associated with the CTCA**

CTCA Power Flow Study Group

- **Duke Energy Carolinas (“Duke”)**
- **Duke Energy Progress (“Progress”)**
- **Dominion Energy South Carolina (“DESC”)**
- **South Carolina Public Service Authority (“SCPSA”)**

CTCA Studies

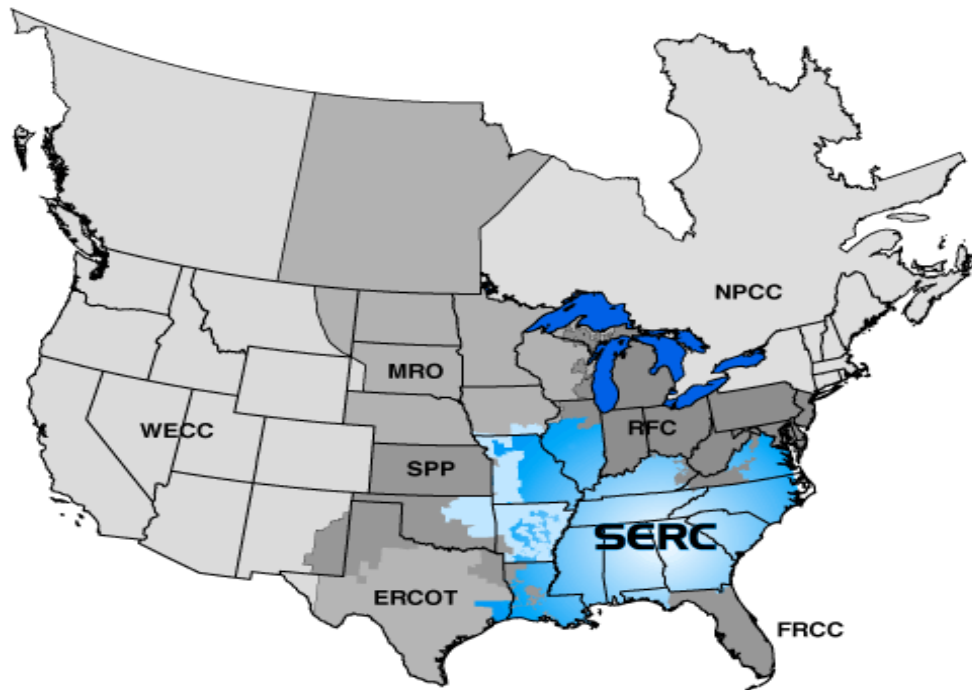
- Assess the existing transmission expansion plans of Duke, Progress, DESC, and SCPSA to ensure that the plans are simultaneously feasible.
- Identify any potential joint solutions that are more efficient or cost-effective than individual company plans, which also improve the simultaneous feasibility of the Participant companies' transmission expansion plans.
- The Power Flow Study Group ("PFSG") , performs the technical analysis outlined in this study scope under the guidance and direction of the Planning Committee ("PC").

CTCA Studies

2020 PFSG work activities

- 2020 TPL 001 Transmission Assessment Coordination
 - PFSG coordinates power flow cases, study files in 1st quarter 2020

SERC Future Year Assessments Long Term Working Group (LTWG)



SERC LTWG Study Purpose

- Analyze the performance of the members' transmission systems and identify limits to power transfers occurring non-simultaneously among the SERC members.
- Evaluate the performance of bulk power supply facilities under both normal and contingency conditions for future years.
- Focus on the evaluation of sub-regional and company-to-company transfer capability.

SERC Long Term Working Group 2020 Work Schedule

- 2019 Data Bank Update kickoff began in January 2020
- Power flow cases scheduled to be finalized on June 3, 2020
- Future Assessment Study Case: 2025 Summer Peak Load
- Study to be completed by LTWG - June thru October
- Final Report in December

Eastern Interconnection Planning Collaborative (EIPC) Assessments

EIPC Purpose

- Established to facilitate the coordination of existing Planning Authorities transmission plans, conduct reliability analyses of the combined Eastern Interconnection, and conduct studies to support state, provincial, regional, or federal public policy decision-making.

PLANNING AUTHORITIES

- ASSOCIATED ELECTRIC COOPERATIVE
- CUBE HYDRO CAROLINAS
- DUKE ENERGY - CAROLINAS
- DUKE ENERGY - FLORIDA
- DUKE ENERGY - PROGRESS
- LGE/KU (LOUISVILLE/KENTUCKY UTILITIES)
- FLORIDA POWER & LIGHT
- GEORGIA TRANSMISSION CORPORATION
- ISO - NEW ENGLAND
- JEA (JACKSONVILLE, FL)
- MIDCONTINENT ISO
- MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
- NEW YORK ISO
- PJM INTERCONNECTION
- POWERSOUTH ENERGY COOPERATIVE
- SOUTH CAROLINA ELECTRIC & GAS
- SANTEE COOPER
- SOUTHERN COMPANY
- SOUTHWEST POWER POOL
- TENNESSEE VALLEY AUTHORITY

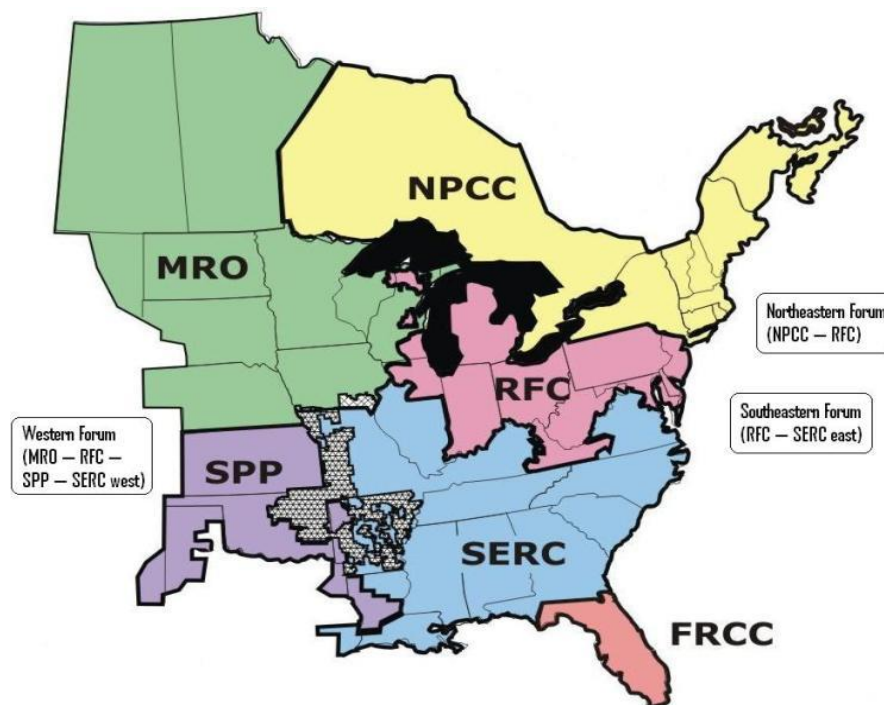
EIPC Transmission Analysis Working Group (TAWG) 2020 Study Efforts

- Steady-State network models assembly and verification
- Perform “High Renewables” steady state analysis
- Compile Analysis into Report

EIPC TAWG 2020 Work Schedule

- Case Development: February-March 2028
 - 2028 summer and 2028/29 winter peak cases and high renewable cases (due by June 30)
- AC analysis for model verification to be completed (due by August 31)
- Final Analysis in to be completed (due by September 30)
- Compile Analysis into Report (due by November 30)

Eastern Reliability Assessment Group (ERAG)



ERAG MMWG

The Multiregional Modeling Working Group (MMWG) is responsible for developing a library of solved power flow models and associated dynamics simulation models of the Eastern Interconnection.

The models are for use by the Regions and their member systems in planning future performance and evaluating current operating conditions of the interconnected bulk electric systems.

ERAG MMWG 2020 activity

- Steady State Model Updates – August - September
- Final Steady State base cases to be approved September - October
- Dynamic Models to be updated November 2020 - January 2021

Multi-Party Studies

Questions?

Next SCRTP Meeting

- Review and discuss the initial results of the Economic Transfer Studies
- Review and discuss Multi-Party Assessment Studies
- SCRTP Email Distribution List will be notified of meeting announcement
- Register online

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Stakeholder Meeting

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