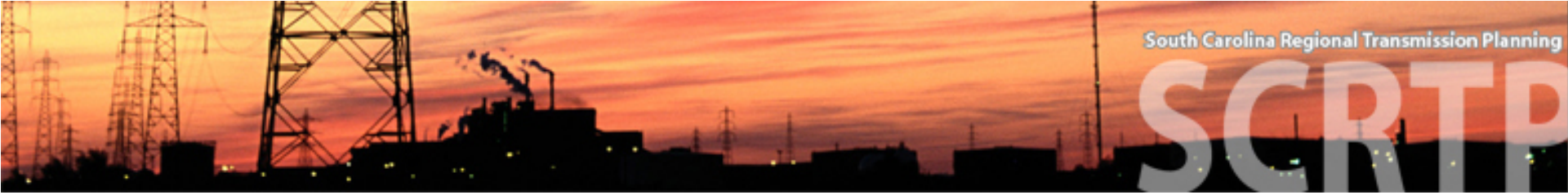

South Carolina Regional Transmission Planning

Stakeholder Meeting

Old Santee Canal Park

Interpretive Center – Canal Room

900 Stony Landing Drive

Moncks Corner, SC 29461

March 30, 2015

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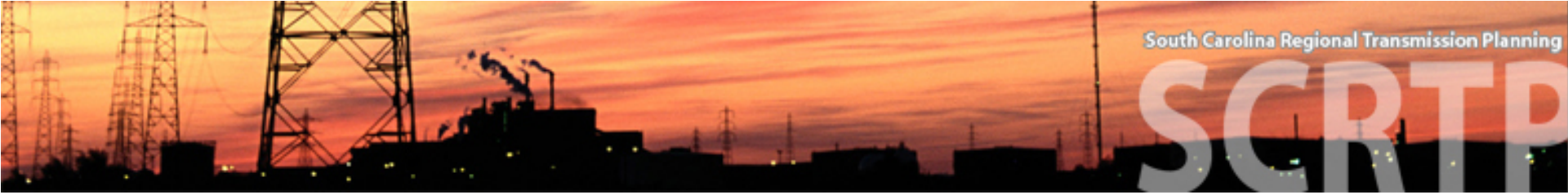

Purpose and Goals of Today's Meeting

- FERC Order 1000 Update
  - Regional
  - Interregional
- Elect Stakeholder Group Voting Members
- Stakeholders Select Economic Transfer Sensitivities
- Review and Discuss Assessment and Planning Studies
  - CTCA
  - SERC
  - ERAG
  - Other

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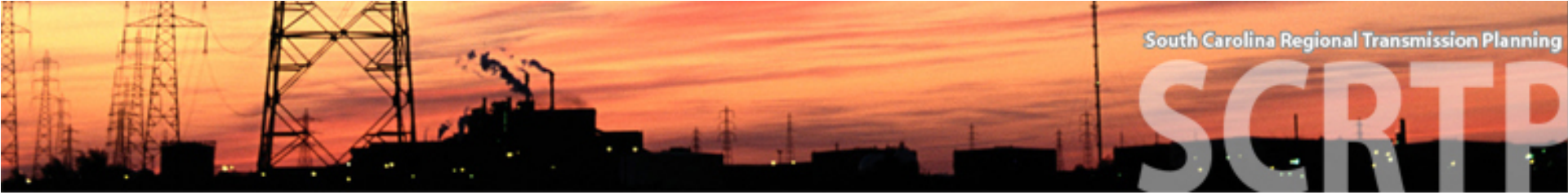

FERC Order 1000
Transmission Planning and Cost Allocation

Clay Young

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FERC Order 1000

- Planning Requirements (Regional and Interregional)
  - Reliability
  - Economics
  - Public Policy
- Cost Allocation Requirements
- Non-incumbent Developer Requirements

Order 1000 Update

Regional - Milestones

- July 21, 2011 FERC issued Order 1000
- Oct. 11, 2012 SCE&G filed a revised Attachment K (v1) including proposed Order 1000 Regional Processes
- April 18, 2013 FERC issued Order Accepting SCE&G filing but requiring revisions
- Oct. 15, 2013 SCE&G filed a revised Attachment K (v2) including proposed revisions

Order 1000 Update

(Continued) Regional – Milestones

- May 14, 2014 FERC issued Order accepting SCE&G filing but requiring additional revisions
- July 14, 2014 SCE&G filed a revised Attachment K (v3) including proposed additional revisions
- Jan 22, 2015 FERC issued Order Accepting SCE&G filing but requiring revisions
- Feb 23, 2015 SCE&G filed a revised Attachment K (v4) including proposed additional revisions
- FERC reviewing

Order 1000 Update

Materially Different Proposal - a transmission project will be deemed materially different as compared to another transmission alternative under consideration if the proposal contains significant geographic or electrical differences in the alternative's proposed interconnection point(s) ~~and~~ or transmission line routing

Order 1000 Update

Withdrawal of an Enrolled Transmission Provider – enrolled transmission providers that withdraw from the region will not be responsible for cost allocation for any project that has not yet been selected for inclusion in the Regional Transmission Plan as of the time notice of withdrawal is provided

Order 1000 Update

Incumbent and Non-incumbent Transmission Providers may request Cost Allocation - should the Transmission Providers propose a Regional Project under Attachment K that they do not intend to develop, any Qualified Developer may request regional cost allocation

(continued)

Order 1000 Update

Since Qualified Developer definition includes the term “any entity”, both incumbent transmission providers and non-incumbent transmission developers that are Qualified Developers may request regional cost allocation for such projects

Order 1000 Update

Costs Outside of SCRTP - the SCRTP transmission providers have not agreed, as a general rule, to bear the costs of any upgrades needed in another transmission planning region in connection with transmission projects approved for inclusion in the SCRTP regional transmission plan

Order 1000 Update

Questions?

Order 1000 Update

Interregional - Milestones

- July 10, 2013 SCE&G filed a revised Attachment K including proposed Order 1000 Interregional Processes
- Jan 22, 2015 FERC issued Order Accepting SCE&G filing but requiring revisions
- Mar 24, 2015 SCE&G filed a revised Attachment K including proposed additional revisions
- FERC reviewing

Order 1000 Update

Definition of Interregional Transmission Project – revised the definition of a transmission project that is eligible to seek interregional cost allocation as a project that connects to "either existing transmission facilities or transmission projects included in the regional transmission plan that are currently under development.

Order 1000 Update

Identification of Interregional Projects by Developers and how to Trigger evaluation:

- Project proposed for potential ICAP must be submitted in both the SCRTP and SERTP
- Project must be interregional in nature
- Project must be identified as interregional and identify the SCRTP and SERTP as the regions in which the project is proposed to interconnect

Order 1000 Update

Identification of Interregional Projects by Developers and how to Trigger evaluation:

- Project must satisfy all applicable requirements in both Regions
- After both Regions verify all requirements met, the two Regions will jointly evaluate the proposed interregional project

Order 1000 Update

Types of Studies used in Evaluations - The Transmission Provider will evaluate potential interregional transmission projects consistent with evaluations of Local and Regional projects. (Referenced sections in the Local and Regional Planning processes of Attachment K that discuss types of studies)

Order 1000 Update

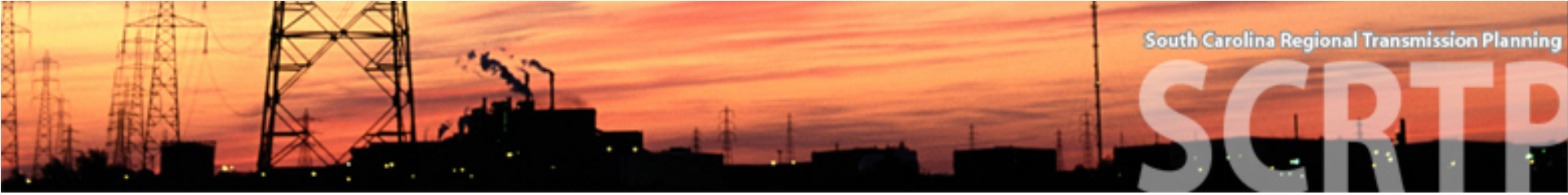
Proposals that do not meet requirements – TPs will post, on the Regional Planning Website, a list of all interregional transmission projects that are proposed for potential selection in a regional transmission plan for purposes of cost allocation in both the SCRTP and the SERTP that are found not to be eligible for consideration because they do not satisfy the regional project threshold criteria of one or both of the regions

Order 1000 Update

Proposals that do not meet requirements – The TPs will also post an explanation of the relevant thresholds the proposed interregional project failed to satisfy

Order 1000 Update

Questions?



SCRTP Stakeholder Group Voting Member Elections

Tom Abrams

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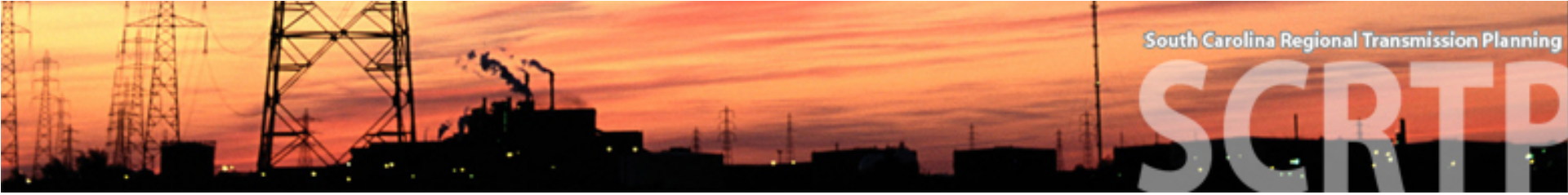

Stakeholder Group Sectors

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

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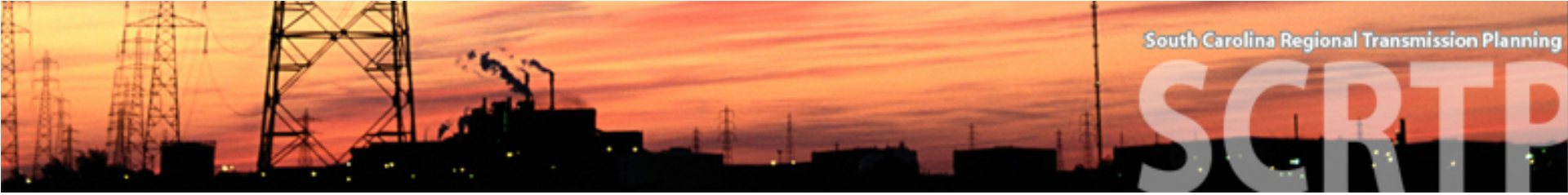

Key Features of Stakeholder Group

- Stakeholder participants determine sector affiliation
- Each sector will have two voting members
- One vote per voting member
- Majority Rule
- Voting members determined by sector members biennially during even years
- Each company can have no more than one voting member in the stakeholder group
- Stakeholder meetings are open to non-stakeholder members
- Stakeholder group will identify and request economic transfers to be studied (if more than five requested, voting members will vote to select the top five)
- Stakeholder group can change the number and timing of meetings with agreement by SCPSA and SCE&G

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2014 Voting Stakeholder Group Members

- Cooperatives
  - John Boyt, Central Electric
  - Bob Beadle, NCEMC
- Municipals
  - John Bagwell, Orangeburg DPU
  - Alan Loveless, City of Georgetown
- Network and PTP Transmission Customers
  - J. W. Smith, Southeastern Power Administration
  - Vacant

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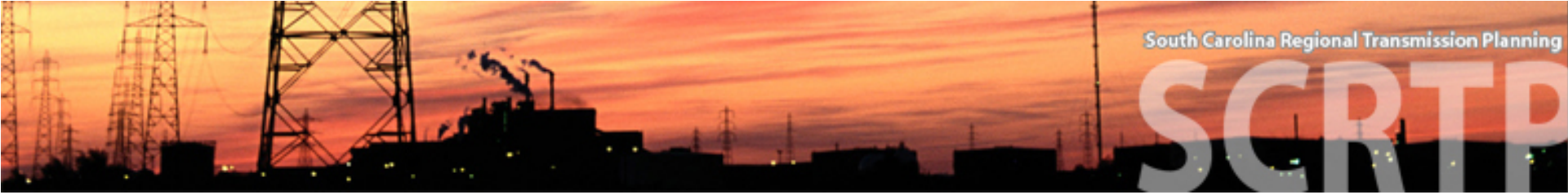
2014 Voting Stakeholder Group Members

- Generation Owners / Developers
  - Victor Shaw, Calpine, Columbia Energy Center
  - Vacant
- Marketers
  - Eddie Folsom, SCE&G Power Marketing
  - Glenda Horne, Santee Cooper Power Marketing
- Transmission Owners
  - Bob Pierce, Duke Energy-Carolinas
  - Kerry Sibley, Georgia Transmission

2014 Voting Stakeholder Group Members

- ISO / RTO
  - Vacant
  - Vacant



Annual Election of SCRTP Stakeholder Group

Stakeholder Breakout Sessions to Select Voting Representatives

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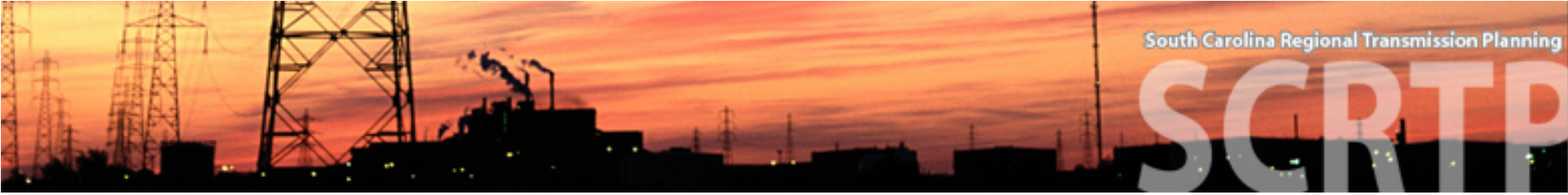

Economic Transmission Planning Sensitivities

Tom Abrams

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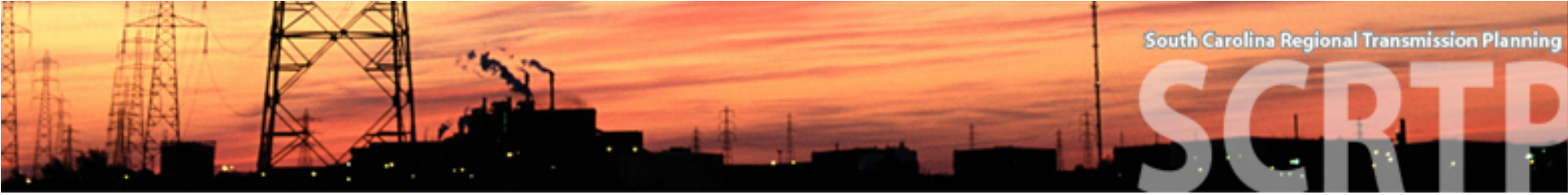

Economic Transmission Planning Principle

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

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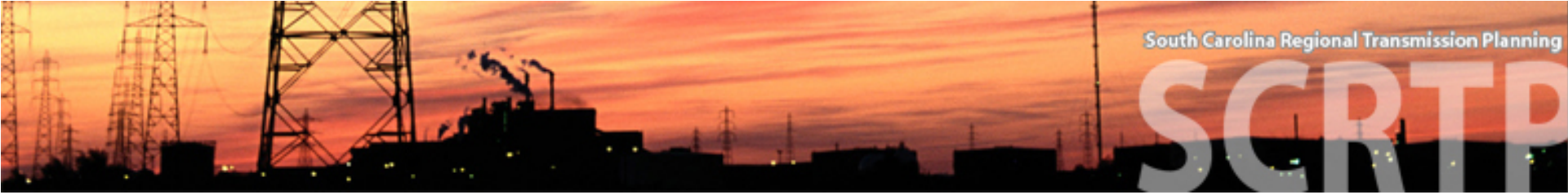
Economic Transmission Planning Principle

(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 (Sensitivity #1 was completed as the NC/SC Wind Study conducted last year)
- 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

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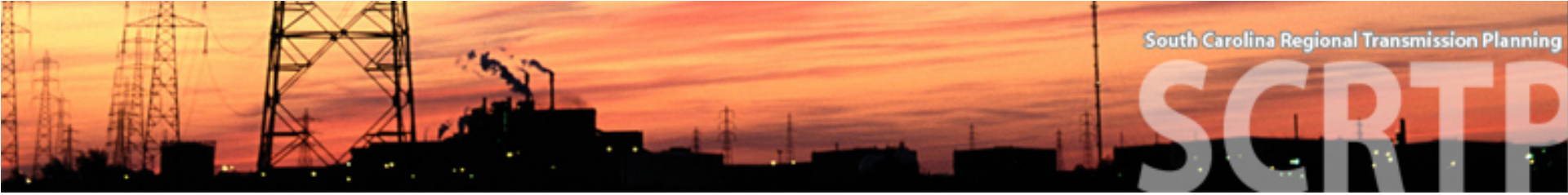
Economic Transmission Planning Sensitivity Selection

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



Transmission Planning Base Cases
2015 MMWG and SERC Series

2015 Fall Peak
2015 Spring Light Load
2015 Spring Peak
2015 Summer Shoulder
2015 Summer Peak
2015 Winter Peak
2016 Spring Peak
2016 Summer Peak
2016 Winter Peak
2018 Summer Peak
2018/2019 Winter Peak
2020 Spring Light Load
2020 Summer Peak
2020 Winter Peak
2021 Summer Peak
2025 Summer Peak
2025/2026 Winter Peak

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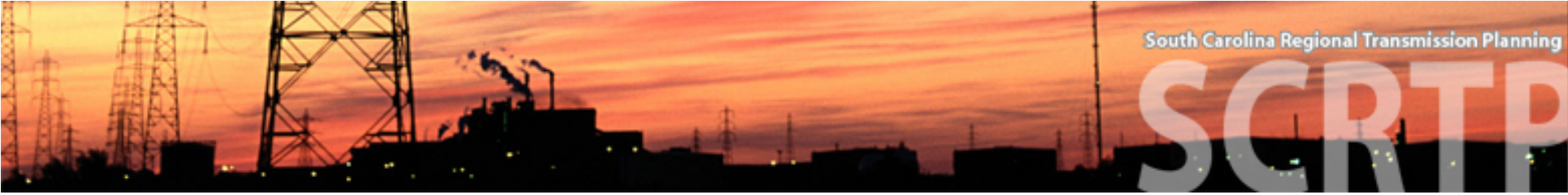
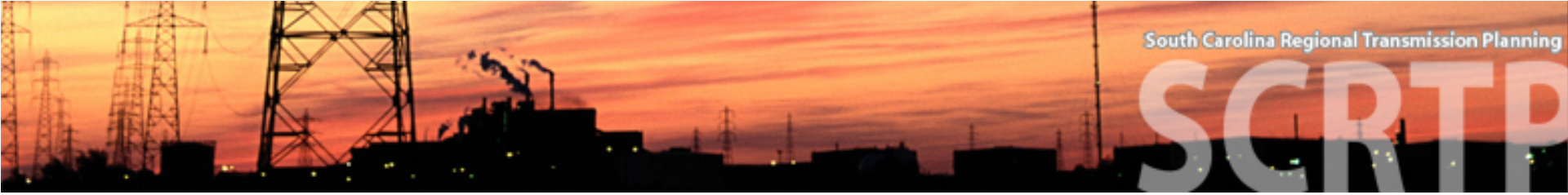


Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2010	SCE&G	CPLE	2015 Summer	500 MW
2010	SCE&G	Duke	2015 Summer	500 MW
2010	SCE&G	CPLE	2020 Summer	500 MW
2010	SCE&G	Duke	2020 Summer	500 MW
2010	SCE&G	Southern	2020 Summer	500 MW
2011	SCE&G	CPLE	2022 Summer	200 MW
2011	Santee Cooper	CPLE	2015 Summer	500 MW
2011	Santee Cooper	Southern	2015 Summer	500 MW
2011	Santee Cooper	Duke	2015 Summer	500 MW
2011	SCRTP (Coast)	Southern/PJM	2020 Summer	1000 MW (500 Each)
2012	Santee Cooper	Georgia Transmission Company	2017 Summer	100 MW
2012	SCE&G	Progress Energy Carolinas	2017 Summer	200 MW
2012	SCE&G	Southern	2017 Summer	200 MW
2012	SCE&G	Progress Energy Carolinas	2022 Summer	200 MW



Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2012	SCRTP (Coast)	Southern/PJM	2022 Summer	1000 MW (500 Each)
2013	Southern	Santee Cooper	2014 Summer	500 MW
2013	Southern	Santee Cooper	2014 Winter	500 MW
2013	SCE&G	Progress Energy Carolinas	2018 Summer	200 MW
2013	SCE&G	Southern	2018 Summer	200 MW
2013	SCE&G	Southern	2023 Summer	200 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	600MW/400 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	500MW/500 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	940MW/620 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	220MW/220 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	940MW/620 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	220MW/220 MW

***2013 CTCA 2024 Summer/Shoulder/Winter Carolinas Wind Study**

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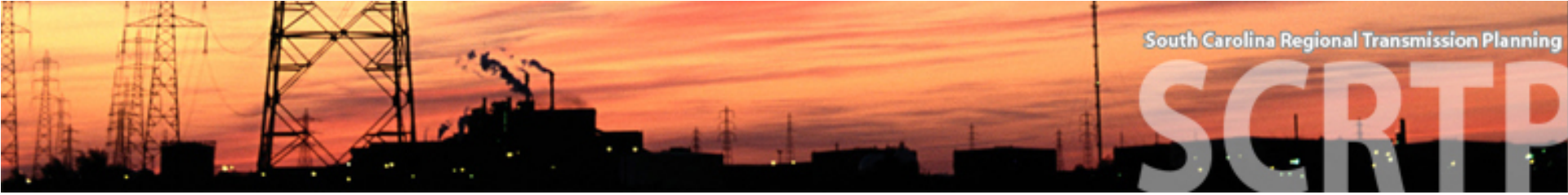

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2014	Duke	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

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Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #1:	
Source Area:	Southern Company
Sink Area:	SCE&G
Transfer (MW):	300 MW
Study Year:	2016/17
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjancent systems for future periods

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #2:	
Source Area:	Southern Company
Sink Area:	SCE&G
Transfer (MW):	300 MW
Study Year:	2018
Study Conditions:	Summer
Other Information:	N/A
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjancent systems for future periods

Economic Transmission Planning Sensitivity Selection

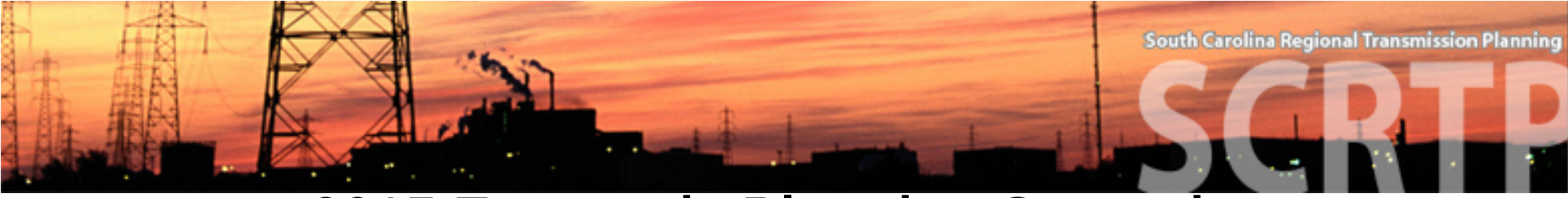
Economic Sensitivity #3:	
Source Area:	Duke
Sink Area:	SCE&G
Transfer (MW):	200 MW
Study Year:	2018
Study Conditions:	Summer
Other Information:	N/A
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjancent systems for future periods

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #4:	
Source Area:	Southern Company
Sink Area:	SCE&G
Transfer (MW):	350 MW
Study Year:	2018/19
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjancent systems for future periods

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #5:	
Source Area:	Duke
Sink Area:	SCE&G
Transfer (MW):	250 MW
Study Year:	2018/19
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjancent systems for future periods



2015 Economic Planning Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions
1	SOCO	SCE&G	300	2016/17	Winter
2	SOCO	SCE&G	300	2018	Summer
3	DUKE	SCE&G	200	2018	Summer
4	SOCO	SCE&G	300	2018/19	Winter
5	DUKE	SCE&G	250	2018/19	Winter
6					
7					

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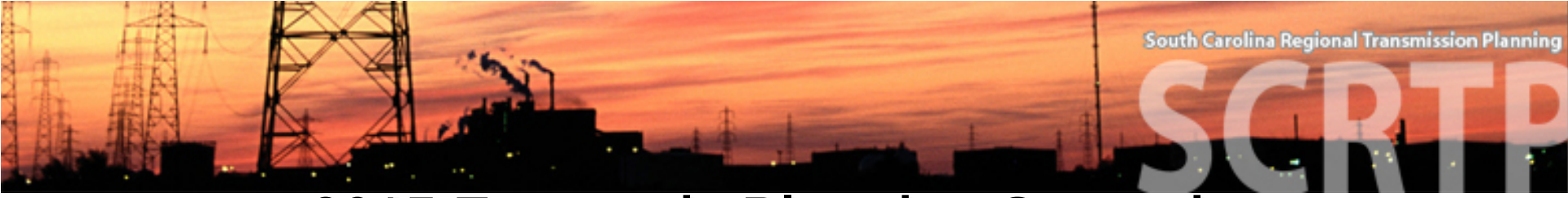

2015 Economic Planning Scenarios

Selected by Stakeholders During the March 30, 2015 Meeting

#	Source	Sink	Amount (MW)	Year	Study Conditions
1	SOCO	SCE&G	300	2016/17	Winter
2	SOCO	SCE&G	300	2018	Summer
3	DUKE	SCE&G	200	2018	Summer
4	SOCO	SCE&G	300	2018/19	Winter
5	DUKE	SCE&G	250	2018/19	Winter

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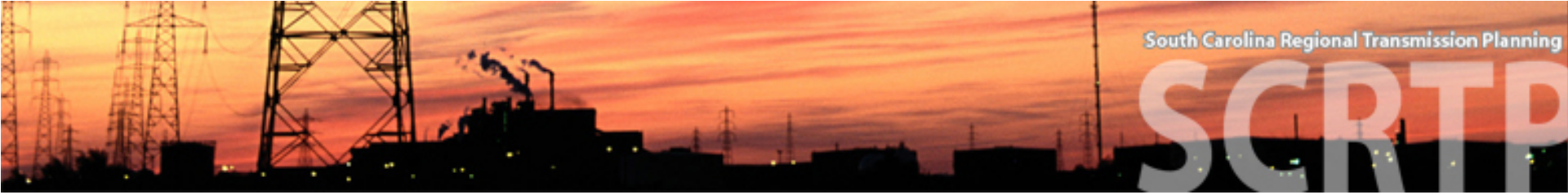
Reliability Assessment Studies

Rick Thornton



Multi-Party Assessments

- Carolina Transmission Coordination Arrangement (CTCA) Assessments
- Southeastern Electric Reliability Corporation (SERC) Assessments
- Eastern Interconnection Reliability Assessment Group (ERAG)
- Eastern Interconnection Planning Collaboration (EIPC)

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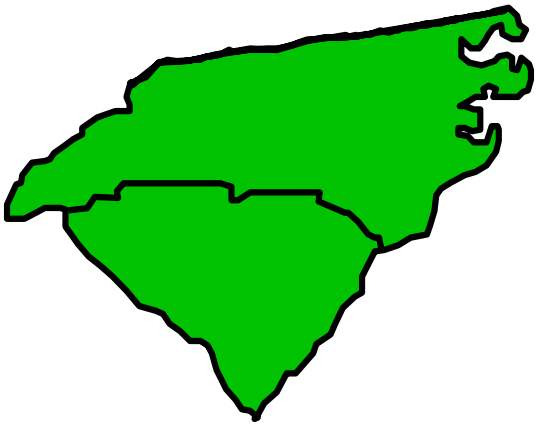
CTCA Future Year Assessments



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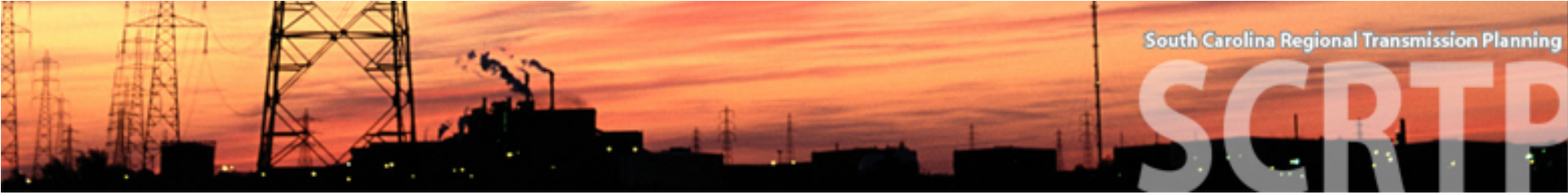
CTCA Purpose

- 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 and assessment and operating activities among the specific parties associated with the CTCA



CTCA Purpose

Interchange Agreements associated with the CTCA

Duke Energy Carolinas ("Duke") and Duke Energy Progress ("Progress")

Duke Energy Carolinas ("Duke") and South Carolina Electric & Gas Company ("SCE&G")

Duke Energy Carolinas ("Duke") and South Carolina Public Service Authority ("SCPSA")

Duke Energy Progress ("Progress") and South Carolina Electric & Gas Company ("SCE&G")

Duke Energy Progress ("Progress") and South Carolina Public Service Authority ("SCPSA")

South Carolina Electric & Gas Company ("SCE&G") and South Carolina Public Service Authority ("SCPSA")

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CTCA Power Flow Study Group

- Duke Energy Carolinas ("Duke")
- Duke Energy Progress ("Progress")
- South Carolina Electric & Gas ("SCEG")
- South Carolina Public Service Authority ("SCPSA")

CTCA Studies

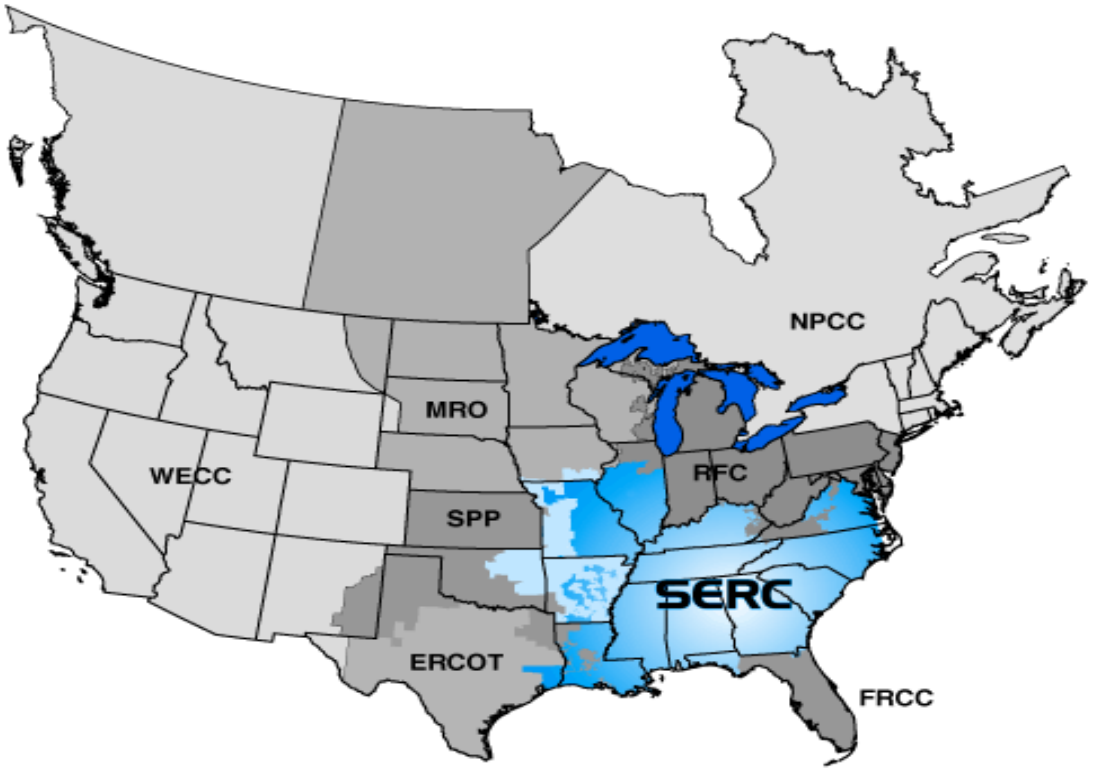
- Assess the existing transmission expansion plans of Duke, Progress, SCEG, and SCPSA to ensure that the plans are simultaneously feasible.
- Identify any potential joint solutions that are more efficient or cost-effective than individual company plans, which also improve the simultaneous feasibility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

CTCA Studies
2015 Study

- No 2015 study defined

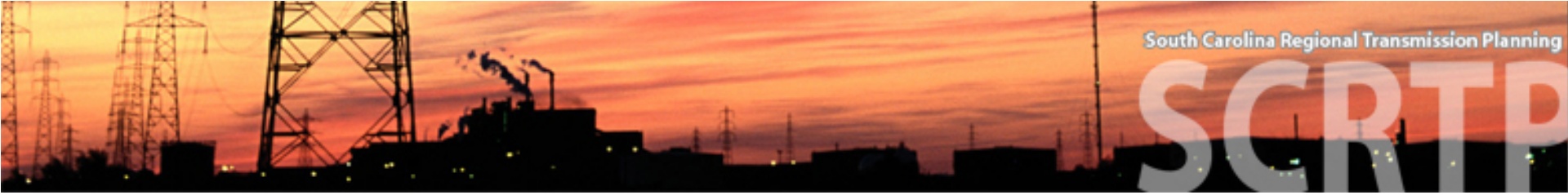
SERC LTSG Assessments

SERC Future Year Assessments
Long Term Study Group (LTSG)



SERC LTSG 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 Study Group
2015 Work Schedule

- LTSG Data Bank Update –May 12-14 Hosted by Southern
- Study Case: 2020 Summer Peak Load
- Work completed by LTSG June thru October
- Final Report December, 2015

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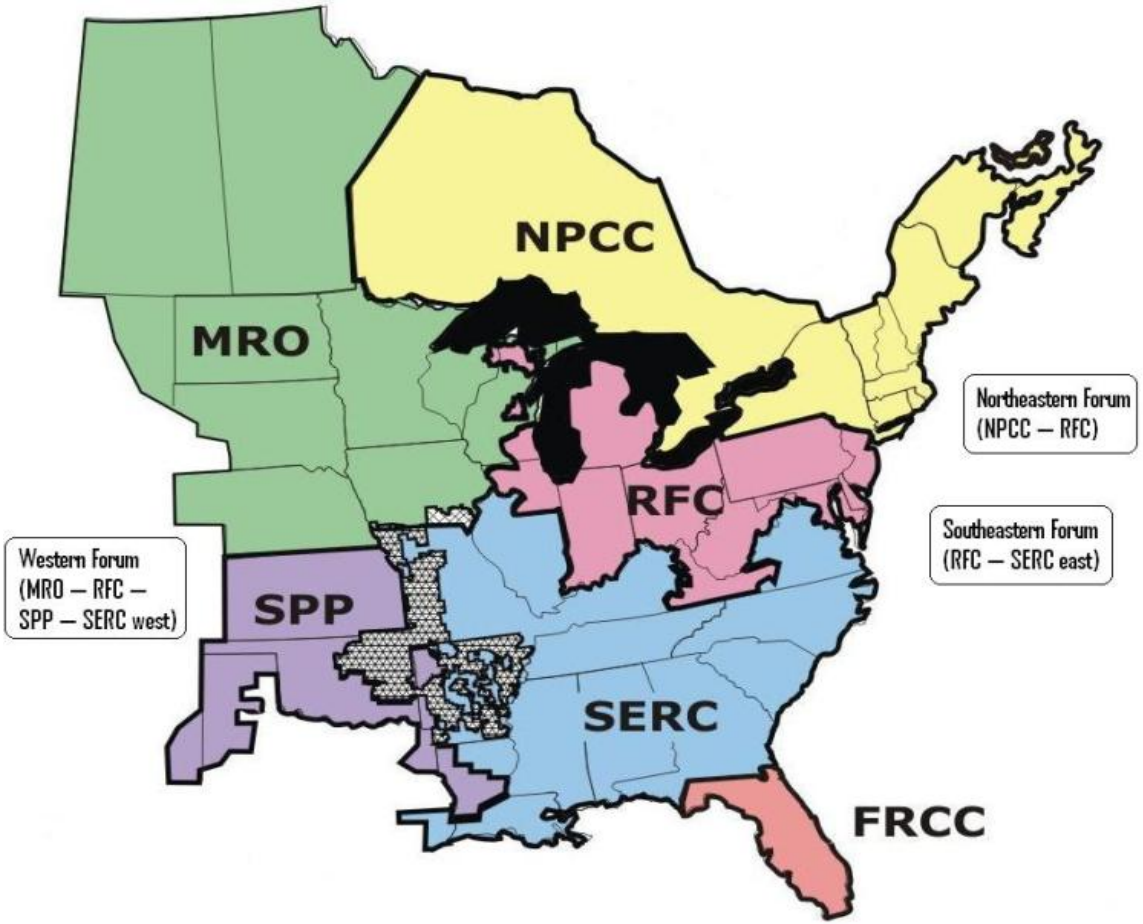
ERAG Assessments



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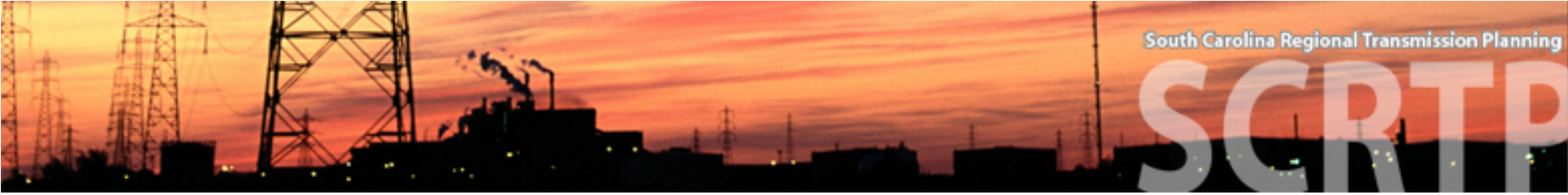
ERAG Assessments

- No Long Term Study Performed

EIPC Assessments



Model Development and Evaluation

- Develop 2025 summer and winter models
- Perform contingency and transfer analysis
- Identify gaps and develop enhancements as appropriate
- Provide feedback to regional planning processes

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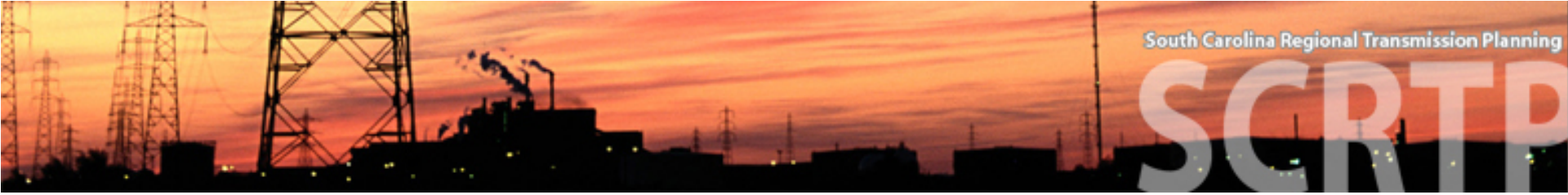

Next SCRTP Meeting

- Update on FERC Order 1000
- Initial study results from recently completed Reliability Studies (TPL Standards and Company Planning Criteria)
- Present and discuss major transmission improvements
- Assessment and Planning Study Update
- EIPC Update
- SCRTP Email Distribution List will be notified
- Register online

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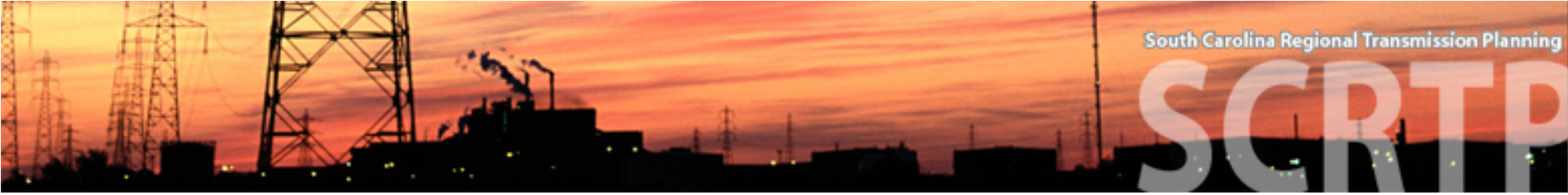

South Carolina Regional Transmission Planning

Stakeholder Meeting

Old Santee Canal Park

Interpretive Center – Canal Room

900 Stony Landing Drive

Moncks Corner, SC 29461

March 30, 2015

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