



# **TAG Meeting**

## **June 7, 2021**

**Webinar**

**Final**



# **TAG Meeting Agenda**

- 1. Administrative Items – Rich Wodyka**
- 2. 2021 Study Activities and Study Scope Update – Lee Adams**
- 3. NCTPC 2020 Collaborative Transmission Plan Mid-year Update – Mark Byrd**
- 4. Regional Studies Update – Bob Pierce**
- 5. 2021 TAG Work Plan – Rich Wodyka**
- 6. TAG Open Forum – Rich Wodyka**

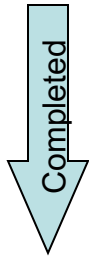


# **2021 Study Activities and Study Scope**

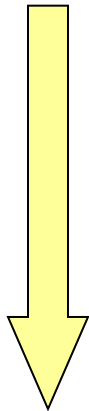
**Lee Adams**  
**Duke Energy Progress**



# Study Process Steps



- 1. Assumptions Selected**
- 2. Study Criteria Established**
- 3. Study Methodologies Selected**
- 4. Models and Cases Developed**
- 5. Technical Analysis Performed**
- 6. Problems Identified and Solutions Developed**
- 7. Collaborative Plan Projects Selected**
- 8. Study Report Prepared**





# Assumptions Selected

- **Study Years for reliability analyses:**
  - **Near-term: 2026 Summer, 2026/2027 Winter**
  - **Longer-term: 2031 Summer**



# Assumptions Selected Resource Additions

Company	Generation Facility	2026S	2026/2027W	2031S
DEC	Lincoln County CT (525 MW)	Included	Included	Included
DEC	Apex PV (30 MW)	Included	Included	Included
DEC	Blackburn PV (61.7 MW)	Included	Included	Included
DEC	Broad River PV (50 MW)	Included	Included	Included
DEC	Gaston PV (25 MW)	Included	Included	Included
DEC	High Shoals PV (16 MW)	Included	Included	Included
DEC	Lick Creek PV (50 MW)	Included	Included	Included
DEC	Maiden Creek PV (69.3 MW)	Included	Included	Included
DEC	Oakboro PV (40 MW)	Included	Included	Included
DEC	Olin Creek PV (35 MW)	Included	Included	Included



# Assumptions Selected Resource Additions

Company	Generation Facility	2026S	2026/2027W	2031S
DEC	Partin PV (50 MW)	Included	Included	Included
DEC	Pelham PV (32 MW)	Included	Included	Included
DEC	Pinson PV (20 MW)	Included	Included	Included
DEC	Ruff PV (22 MW)	Included	Included	Included
DEC	Speedway PV (22.6 MW)	Included	Included	Included
DEC	Stanly PV (50 MW)	Included	Included	Included
DEC	Stony Knoll PV (22.6 MW)	Included	Included	Included
DEC	Sugar PV (60 MW)	Included	Included	Included
DEC	Thinking Tree (35 MW)	Included	Included	Included
DEC	Two Hearted PV (22 MW)	Included	Included	Included



# Assumptions Selected Resource Additions

Company	Generation Facility	2026S	2026/2027W	2031S
DEC	West River PV (40 MW)	Included	Included	Included
DEC	Westminster PV (75 MW)	Included	Included	Included
DEP	Asheville CC (560 MW)	Included	Included	Included
DEP	Highest Power Solar (48.7 MW)	Included	Included	Included
DEP	Trent River Solar (79.9 MW)	Included	Included	Included
DEP	Bay Tree Solar (70.1 MW)	Included	Included	Included
DEP	Roxboro CC Units 1-2 (2700 MW)	Not Included	Not Included	Included
DEP	Mayo Battery Storage (568 MW)	Not Included	Not Included	Included





# Assumptions Selected Resource Retirements

Company	Generation Facility	2026S	2026/2027W	2031S
DEC	Allen 1-5 (1083 MW)	Retired	Retired	Retired
DEC	Cliffside 5 (574 MW)	Retired	Retired	Retired
DEC	Lee 3 (120 MW)	Not retired	Not retired	Retired
DEP	Asheville 1-2 (384 MW)	Retired	Retired	Retired
DEP	Darlington Co 1,2,3,4,6,7,8,10 (514 MW)	Retired	Retired	Retired
DEP	Blewett CTs 1-4 and Weatherspoon CTs 1-4 (232 MW)	Retired	Retired	Retired
DEP	Roxboro Units 1-4 (2462 MW)	Not retired	Not retired	Retired
DEP	Mayo Unit 1 (746 MW)	Not retired	Not retired	Retired



# Study Criteria Established

- **NERC Reliability Standards**
  - Current standards for base study screening
  - Current SERC Requirements
- **Individual company criteria**



# Study Methodologies Selected

- **Thermal Power Flow Analysis**
- **Each system (DEC and DEP) will be tested for impact of other system's contingencies**



# Models and Cases Developed

- **Annual Reliability Study**
  - **Near-term: 2026 Summer, 2026/2027 Winter**
  - **Longer-term: 2031 Summer**
  
- **Public Policy Study**
  - **Assess solar and wind high renewables development and the impact on the NC transmission system.**



# Public Policy Request

- **Accelerated Retirement of Coal Generation**
  - **DEC will model the retirement of Allen 1-5, Cliffside 5, and Lee 3 and will model only the dual fuel capability of Marshall 1-4 and Belews Creek 1-2.**
  - **DEP will model the retirement of Roxboro 1-4, Mayo 1, along with Weatherspoon CTs, and Blewett CTs.**
  
- **Increase Renewable Generation within Duke Energy BAAs**
  - **DEC will model an additional 3000 MW of solar generation**
  - **DEP will model an additional 1500 MW of solar generation and 568 MW of battery storage.**



## **Public Policy Request (cont)**

- **Recent increase of solar and wind power plants located in Virginia and North Carolina within Dominion's service territory (PJM) to the extent locations are available**
  - **Model 2460 MW of Dominion offshore wind into Fentress 500 kV Substation.**
  - **Dominion solar generation as represented in the current MMWG models.**



## **Public Policy Request (cont)**

- **Addition of Midwest and Offshore Wind Generation**
  - **DEC will model importing 1000 MW of offshore wind generation and 2500 MW of Midwest onshore wind and will export 1000 MW of that to DEP**
  - **DEP will model an additional 1600 MW of offshore wind generation landing at New Bern 230 kV Substation and will export 1000 MW of that to DEC.**
  
- **DEP will model the addition of combined cycle gas generation at Roxboro Plant 230 kV Switchyard and will model a transfer of 500 MW from DEP to DEC**



## **Technical Analysis**

- **Conduct thermal screenings of the 2026S, 2026/27W and 2031S base cases**
- **Conduct thermal screenings for solar and wind high renewables development scenarios**





## **Problems Identified and Solutions Developed**

- **Identify limitations and develop potential alternative solutions for further testing and evaluation**
- **Estimate project costs and schedule**



## **Collaborative Plan Projects Selected**

- **Compare all alternatives and select preferred solutions**

## **Study Report Prepared**

- **Prepare draft report and distribute to TAG for review and comment**



# Questions ?





# **NCTPC 2020 Collaborative Transmission Plan Update**

**Mark Byrd**  
**Duke Energy Progress**



## 2021 Mid-Year Update to the 2020 Collaborative Transmission Plan

- **One DEP project was completed**
- **Two DEP project cost estimates went up**
- **Three DEC project cost estimates went up**
- **Four DEP projects were accelerated**
- **One DEC project was delayed**
- **Total Reliability Project Cost estimates changed from \$804M to \$846M**



<b>Reliability Projects in 2020 Plan</b>		
<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
<b>Durham-RTP 230kV Line, Reconductor</b>	<b>DEP</b>	<b>TBD</b>
<b>Brunswick #1 – Jacksonville 230 kV Line, Loop-In to Folkstone 230 kV Substation</b>	<b>DEP</b>	<b>Removed</b>
<b>Jacksonville-Grant’s Creek 230 kV Line and Grant’s Creek 230/115 kV Substation, Construct</b>	<b>DEP</b>	<b>Completed June 2020</b>



<b>Reliability Projects in 2020 Plan (continued)</b>		
<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
<b>Newport-Harlowe 230 kV Line, Newport SS and Harlowe 230/115 kV Substation, Construct</b>	<b>DEP</b>	<b>Completed June 2020</b>
<b>Sutton-Castle Hayne 115 kV North line, Rebuild</b>	<b>DEP</b>	<b>Completed April 2021</b>
<b>Cane River 230 kV Substation, Construct 150 MVAR SVC and 4 CB 230 kV Ring Bus</b>	<b>DEP</b>	<b>Completed October 2019</b>
<b>Asheboro-Asheboro East 115 kV North Line, Reconductor</b>	<b>DEP</b>	<b>June 2022</b>



<b>Reliability Projects in 2020 Plan (continued)</b>		
<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
<b>Rural Hall 100 kV, Install SVC</b>	<b>DEC</b>	<b>Completed March 2020</b>
<b>Orchard Tie 230/100 kV Tie Station, Construct</b>	<b>DEC</b>	<b>Completed August 2020</b>
<b>Windmere 100 kV Line, (Dan River-Sadler), Construct</b>	<b>DEC</b>	<b>Delayed December 2023</b>





<b>Reliability Projects in 2020 Plan (continued)</b>		
<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
<b>Wilkes 230/100 kV Tie Station, Construct</b>	<b>DEC</b>	<b>June 2024</b>
<b>Craggy-Enka 230 kV Line, Construct</b>	<b>DEP</b>	<b>Accelerated December 2024</b>
<b>Cokesbury 100 kV Line (Coronaca-Hodges), Upgrade</b>	<b>DEC</b>	<b>December 2024</b>
<b>South Point Switching Station, Construct</b>	<b>DEC</b>	<b>December 2024</b>



<b>Reliability Projects in 2020 Plan (continued)</b>		
<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
<b>Wateree 115 kV Plant, Upgrade 115/100 kV Transformers</b>	<b>DEP</b>	<b>December 2022</b>
<b>Carthage 230/115 kV Substation, Construct Sub</b>	<b>DEP</b>	<b>Accelerated December 2025</b>
<b>Falls 230 kV Sub, Add 300 MVAR SVC</b>	<b>DEP</b>	<b>December 2028</b>
<b>Castle Hayne–Folkstone 115 kV Line, Rebuild</b>	<b>DEP</b>	<b>Accelerated December 2026</b>
<b>Holly Ridge North 115 kV Switching Station, Construct</b>	<b>DEP</b>	<b>Accelerated December 2026</b>



# *Questions?*





# Regional Studies Reports

**Bob Pierce**  
**Duke Energy**



# **SERC Long Term Working Group Update**



# **SERC Long Term Working Group**

- Completed work on 2021 series of LTWG cases
- Beginning 2026 Summer Study
- Building 2021 series MMWG cases



# SERTP



## SERTP

- 1st Quarter Meeting (WebEx) was held on March 18<sup>th</sup>
- 2nd Quarter Meeting (WebEx) will be June 24<sup>th</sup>
- 2021 Economic Planning Studies





## SERTP

### 1) MISO TBD Region to LGEE Generation – 300 MW

**Year: 2025**

- Load Level: Summer Peak
- Type of Transfer: Generation to Generation
- Source: Generation within MISO TBD
- Sink: Generation within LGEE



## SERTP

### **2) PJM to LGEE Generation – 300 MW**

**Year: 2025**

- Load Level: Summer Peak
- Type of Transfer: Generation to Generation
- Source: Generation within PJM
- Sink: Generation within LGEE



## SERTP

### **3) TVA to LGEE Generation – 300 MW**

**Year: 2025**

- Load Level: Summer Peak
- Type of Transfer: Generation to Generation
- Source: Generation within TVA
- Sink: Generation within LGEE



<http://www.southeasternrtp.com/>



# *Questions?*





# 2021 TAG Work Plan

**Rich Wodyka**  
**Administrator**



## 2021 NCTPC Overview Schedule

### Reliability Planning Process

- Evaluate current reliability problems and transmission upgrade plans
  - Perform analysis, identify problems, and develop solutions
  - Review Reliability Study Results

### Local Economic Planning Process

- Propose and select Local Economic Studies and Public Policy Study scenarios
  - Perform analysis, identify problems, and develop solutions
  - Review Local Economic Study and Public Policy Results

### Coordinated Plan Development

- Combine Reliability and Local Economic Study and Public Policy Results
  - OSC publishes DRAFT Plan
  - TAG review and comment

TAG Meetings





## January - February – March

### ➤ **2020 Study Update**

- ✓ Receive Final 2020 Collaborative Transmission Plan Report
- ✓ Receive Draft 2020 Off-shore Wind Study Report
  - *TAG provide input to the OSC on Offshore Wind Study results*

### ➤ **2021 Study – Finalize Study Scope of Work**

- ✓ Receive request from OSC to provide input on proposed Local Economic Study scenarios and interfaces for study
  - *TAG provide input to the OSC on proposed Local Economic Study scenarios and interfaces for study*
- ✓ Receive request from OSC to provide input in identifying any public policies that are driving the need for local transmission
  - *TAG provide input to the OSC in identifying any public policies that are driving the need for local transmission for study*
- ✓ Receive final 2021 Reliability Study Scope for comment
  - *TAG review and provide comments to the OSC on the final 2021 Study Scope*





# January - February – March

## **First Quarter TAG Meeting – March 22nd**

- **2020 Off-shore Wind Study Analysis**
  - ✓ Receive report on and discuss the 2020 Off-shore Wind Study Results
- **2021 Study Update**
  - ✓ Receive a report on the Local Economic Study scope and any public policy scenarios that are driving the need for local transmission for study
  - ✓ Receive a progress report on the Reliability Planning study activities and the 2021 Study Scope



## **April - May – June**

### **Second Quarter TAG Meeting – June 7th**

- **2021 Study Update**
  - ✓ **Receive a progress report on study activities**
  
  - ✓ **Receive update status of the upgrades in the 2020 Collaborative Plan**



# July - August – September

## Third Quarter TAG Meeting – **TBD**

### ➤ 2021 Study Update

- Receive a progress report on the study activities and preliminary results
- TAG is requested to provide feedback to the OSC on the technical analysis performed, the problems identified as well as proposing alternative solutions to the problems identified



## **October - November - December**

### **Fourth Quarter TAG Meeting – *TBD***

#### **➤ 2021 Selection of Solutions**

- **TAG will receive feedback from the OSC on any alternative solutions that were proposed by TAG members**

#### **➤ 2021 Study Update**

- **Receive and discuss final draft of the 2021 Collaborative Transmission Plan Report**
- **Discuss potential study scope scenarios for 2022 studies**



# Questions ?





**TAG**  
**Open Forum Discussion**

*Comments or Questions?*