

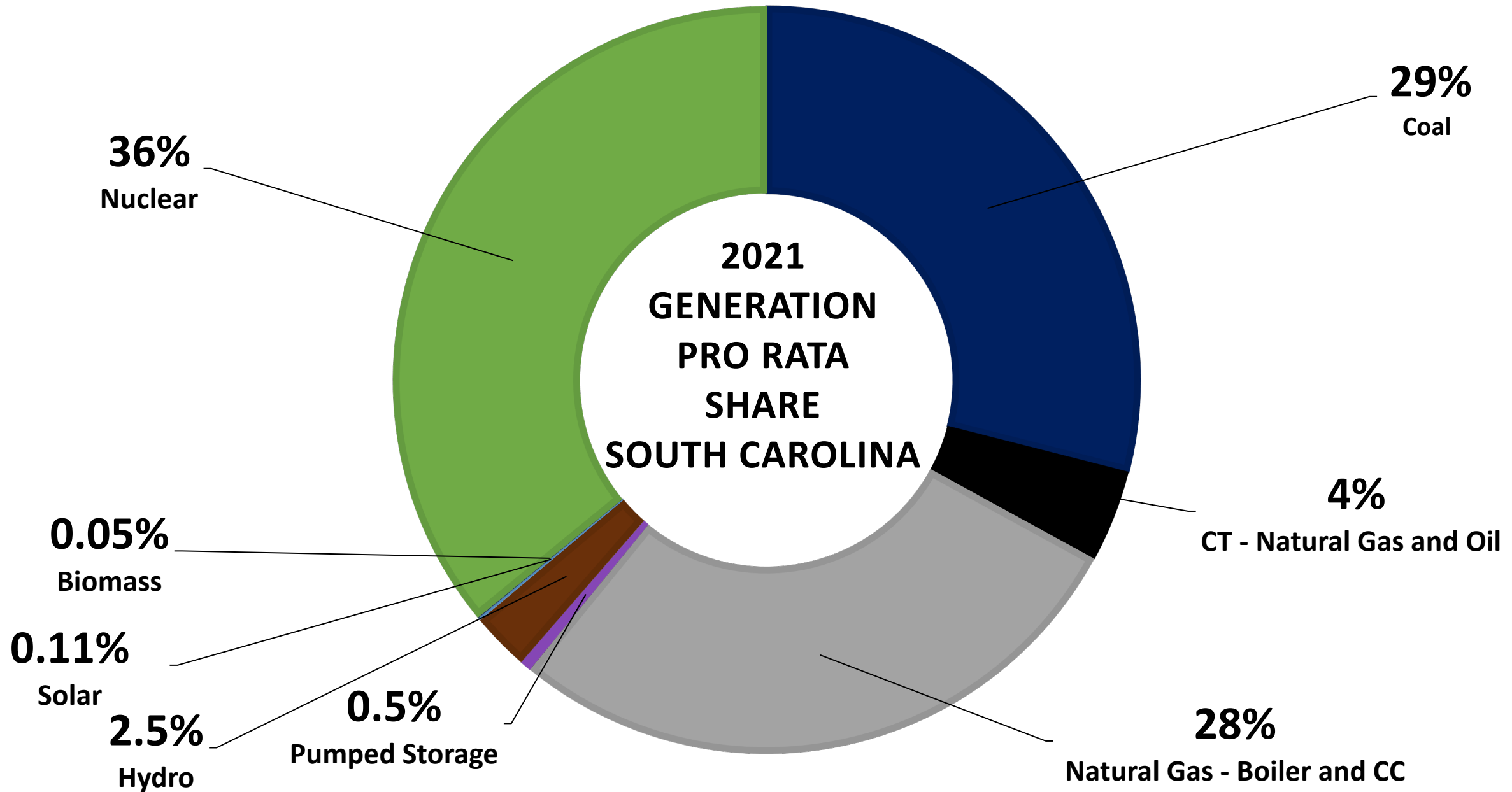
Maintaining A Resilient Energy Portfolio

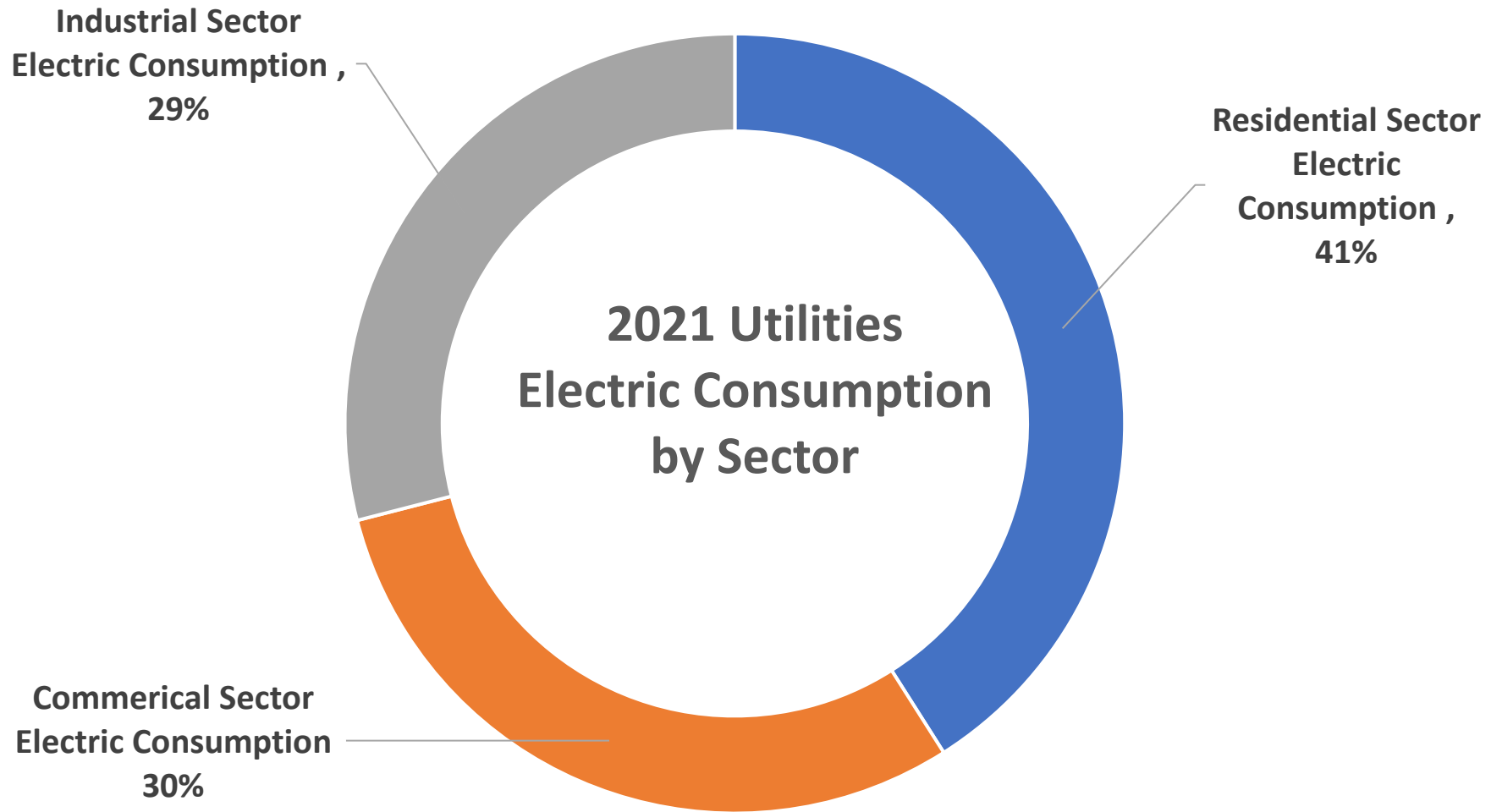


Nanette Edwards, Executive Director
South Carolina Office of Regulatory Staff | *April 12, 2023*



WHERE ARE WE TODAY?





Assessment Findings

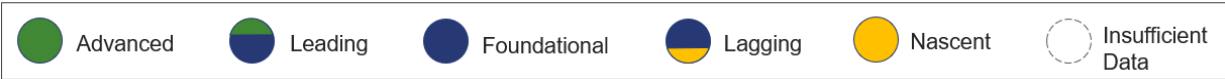
Assessment of the Resiliency of South Carolina's Electric and Natural Gas Infrastructure Against Extreme Winter Storm Events



Overall Findings

Evaluators conclude that the **South Carolina energy system and Utility Providers are adequately prepared to prevent and respond to outages caused by ice storms and winter weather events.**

- **LEUs and LGUs wield the greatest influence** in state’s overall ability to withstand winter weather events and offered sufficient qualitative evidence to illustrate their readiness and ability to respond to winter weather events.
- **SEUs and SGUs pose a much lower overall risk** to statewide infrastructure resiliency



Indicator		LEU	LGU	SEU	SGU
	Indicator 1 Emergency Management and Planning				
	Indicator 2 Risk Management				
	Indicator 3 Staffing and Mutual Assistance Support				
	Indicator 4 Asset Management and Inspections				
	Indicator 5 Operational Protocols				
	Indicator 6 System Design and Hardening				
	Indicator 7 Stakeholder Engagement				
	Indicator 8 Public Communications				
	Indicator 9* Automation		<i>Not Scored*</i>		<i>Not Scored*</i>
	Indicator 10 Situational Awareness				
	Indicator 11 Compliance to Regulations				



Final Recommendations

Strengthen existing procedures for cold weather preparedness, planning, engineering, operations and coordination to prevent extended interruptions in natural gas and electric service

Procedures should provide **enhanced and enforced operations and maintenance** to mitigate disruption.

For entities that are under the purview of mandatory NERC Reliability Standards, see Recommendation No. 3 for the voluntary adoption of the Public Utility Commission of Texas rules.



Final Recommendations

2

Evaluate BPS reliability under more extreme conditions than required by NERC and SERC. Include:

- a. Extended cold weather conditions** more stringent than SERC's winter criteria (e.g., higher loads and colder temperatures)
- b. Loss of a greater number of transmission lines** than those specified in NERC transmission planning contingency criteria



Final Recommendations

3

Form a task force to evaluate the voluntary adoption of practices comparable to those recently adopted in Texas.

Refer to the legislatively-mandated rules instituted around winter storm planning and requirements for Generation Entities and Transmission Providers.

Final Recommendations

4

Adopt the current codes and industry best practices, hardening for greater storm resiliency, and designing for the future.

Prioritizing systems most susceptible to winter-related outages – **Apply enhanced design standards** for equipment and facilities damaged in the recent storms and/or major events.



To harden the transmission and distribution (T&D) infrastructure, physical and structural improvements to lines, poles, towers, substations, and supporting facilities will be needed to make them less vulnerable to the damaging effects of winter-related events.

- a. **Determine and enforce safe loading requirements** for distribution poles based on severe winter weather risks – specifically those used to carry both electric and telecommunications infrastructure.
- b. **Evaluate strategic, targeted undergrounding** of distribution lines in limited, appropriate circumstances based on the exposure to the threat of severe winter events.



Final Recommendations

5

Consider updates to include specific adverse winter weather risk evaluation and mitigation actions to Distribution Integrity Management Plans (DIMP), Transmission Integrity Management Plans (TIMP), operations and maintenance manuals and design standards.



Final Recommendations

6

Collaborate to develop a set of standard emergency preparedness and operating practice guidelines to provide consistent levels of service reliability to all South Carolina electric and natural gas customers. Guidelines may initially be voluntary and evolve to mandatory, once matured.



Final Recommendations

7

Require Utility Provider participation in adverse winter weather emergency drills and/or tabletop exercises with state and local emergency management agencies in their respective emergency management planning cycles.

The State should **consider including propane providers and petroleum pipeline providers** in adverse winter weather emergency drills and/or tabletop exercises.



Final Recommendations



Consider the feasibility of a costs/benefits study of resiliency and reliability enhancements and, as part of that study, consider whether there are any federal funding opportunities.



Final Recommendations

9

Actively participate in regional and national industry groups such as Electric Power Research Institute (EPRI), American Gas Association (AGA), Southeastern Electric Exchange (SEE), Municipal Association of South Carolina (MASC), and Carolinas Public Gas Association (Carolina SPGA).



Final Recommendations

10

Assess the interdependencies between electric power and other key infrastructure (e.g., water, wastewater, telecommunications, transportation, etc.) to identify and address additional extreme cold weather and event response vulnerabilities.

2022 Winter Storm Elliott

- December 24-25, 2022
- Outages
- Load shedding events
- ORS Order from the PSC
- Effects on fuel costs and recovery
- Status of ORS investigation(s)



SCPSC Order No. 2023-21

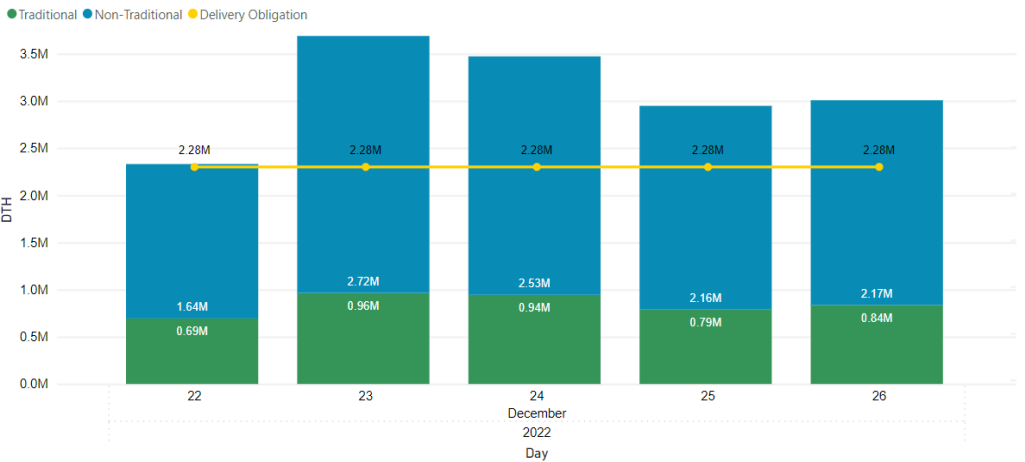
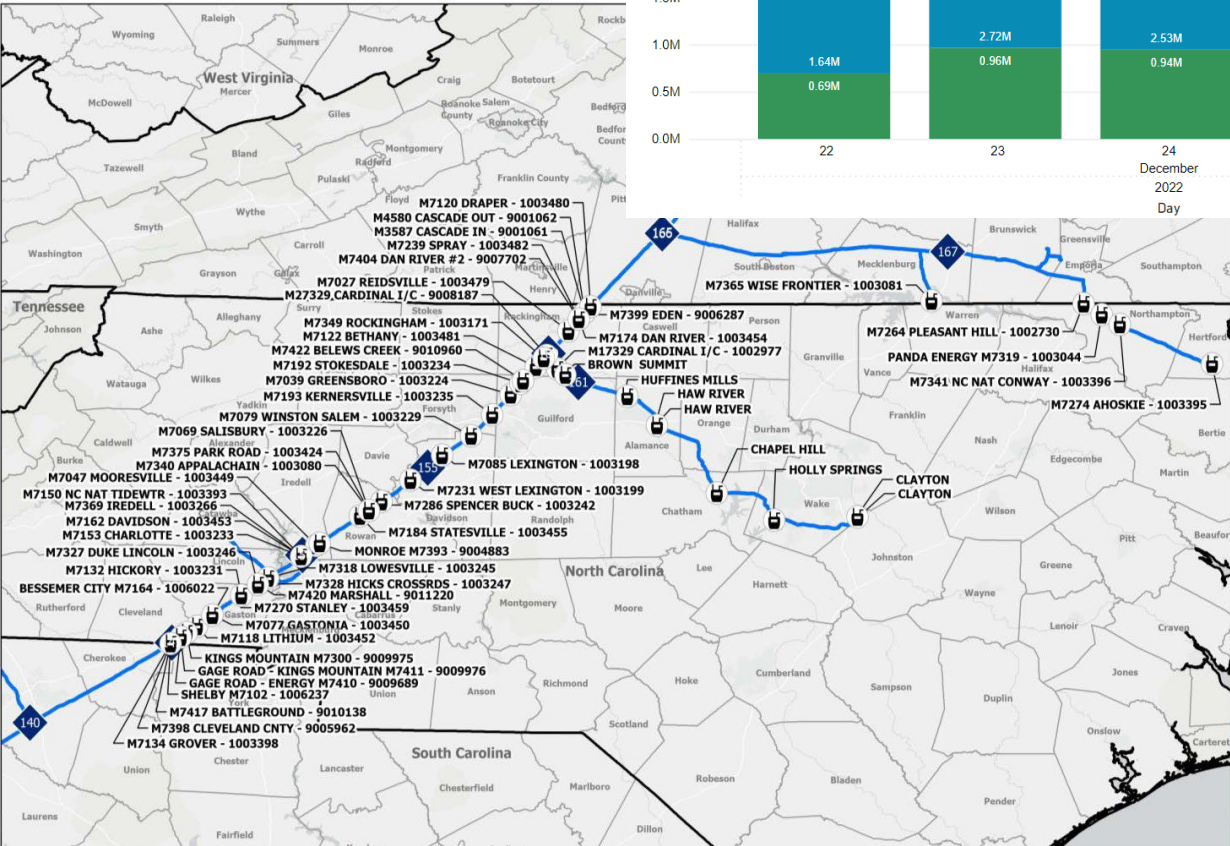
COMMISSION ACTION:

- Pursuant to S.C. Code Ann. § 58-3-200, the Commission requests the Office of Regulatory Staff (ORS) conduct an inspection and examination of any outages and rolling blackouts during the December 2022 Winter Storm in the service territories of Duke Energy Carolinas and Duke Energy Progress and that the Office of Regulatory Staff provide a report to the Commission detailing ORS's findings, conclusions, and recommendations resulting from the inspection and examination. Further, the Commission requests that the inspection and examination investigate the following: (1) the cause(s) of any outages and blackouts, (2) communication from the Companies with customers, the media and any and all regulatory bodies, including, but not limited to SCPSC, SC ORS, FERC and/ or any other state or federal agencies, either before, during or after the rolling blackouts and/or outages began, (3) the role, if any, of SEEM, (4) any lessons learned, (5) areas for improvement, if any, and (6) any additional areas which ORS deems appropriate to explore with regard to any outages and blackouts during the December 2022 Winter Storm Elliott.



North Carolina - Winter Storm Firm Capacity & Actual Utilization

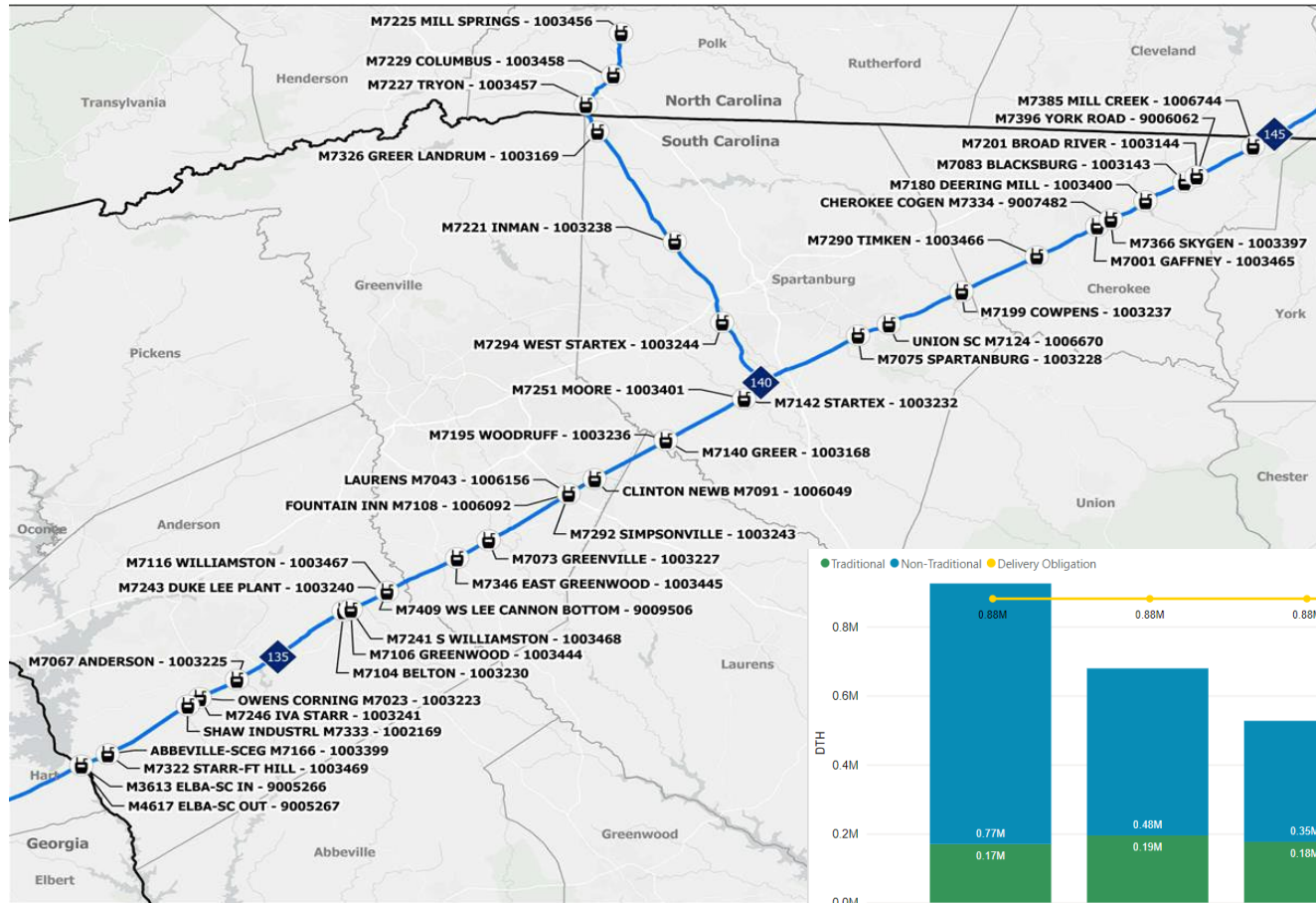
Timeframe: Dec 22 to Dec 26



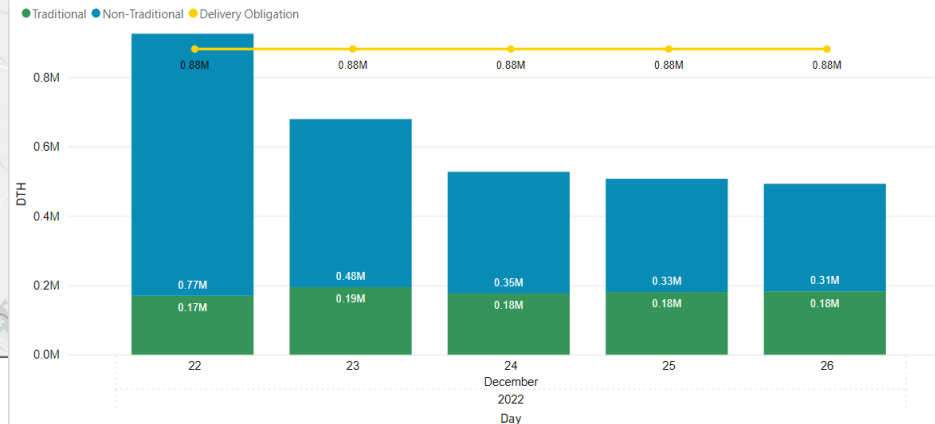
- Delivery Obligation: Firm capacity sold to delivery points in North Carolina (sum of all traditional rights)
- Traditional – Point(s) of delivery specified in a firm service agreement. Graph above reflects the amount of traditional volumes allocated on days during weather event
- Non-Traditional – Point(s) of delivery within contractual path, but not on firm service agreement. Graph above reflects the amount of non-traditional volumes allocated on days during weather event

South Carolina - Winter Storm Firm Capacity & Actual Utilization

Timeframe: Dec 22 to Dec 26



- Delivery Obligation: Firm capacity sold to delivery points in South Carolina (sum of all traditional rights)
- Traditional – Point(s) of delivery specified in a firm service agreement. Graph below reflects the amount of traditional volumes allocated on days during weather event
- Non-Traditional – Point(s) of delivery within contractual path, but not on firm service agreement. Graph below reflects the amount of non-traditional volumes allocated on days during weather event



Yahoo! News

Business

April 6, 2023

"Infuriating," Says Joe Manchin: Court Throws Out Permit for Mountain Valley Pipeline



In exchange for his help passing the most far-reaching climate law in U.S. history, Senator Joe Manchin hoped to fast-track a 303-mile natural gas pipeline that's being built in his home state of West Virginia. Those hopes were dashed yet again on Monday, when a federal appeals court ruled that the pipeline's threats to water quality have not been adequately accounted for.



A Balanced Approach to a Resilient & Reliable Energy Portfolio

- 1) Policy direction may be necessary
- 2) Key considerations may be:
 - Economic development
 - Affordability
 - Conservation
 - Carbon Reduction
 - Diverse fuel/generation mix
 - Quick start/dispatchable/consistent generation
 - Dependable fuel supply



A Balanced Approach to a Resilient & Reliable Energy Portfolio

3) What is South Carolina doing?

- State Energy Plan
- Support for federal initiatives such as “Lower Energy Costs Act” (H.R. 1)





QUESTIONS?