

Duke Energy Carolinas, LLC & Duke Energy Progress, LLC  
Docket NO. M-100, Sub 163  
PSDR No. 2-14. Company View of Pending Storm – Wind and Cold Weather Event  
Period: December 19, 2022 through December 24, 2022

Duke Meteorology Weather

**Friday, December 23<sup>rd</sup>:**

*Regarding the temperature forecasts:*

The daily weather forecast discussion was sent at 5:05am on 12/23:

A band of precipitation associated with the strong arctic cold front will sweep through the area early this morning with rain changing over to a brief period of snow across the mountains and foothills along and north of I-40. Cold arctic air will spill quickly in the area throughout the morning hours behind the front. Gusty winds will lead to dangerous wind chills across the mountains/foothills today.

Main challenge today will be the hourly temperatures as the cold air spread west-to-east across the region. Winds 15 to 25 mph with gusts up to 45 mph will result in much colder wind chills.

For DEC, the 4am sys avg is 45 degrees. Forecast calls for 33 degrees at 7am, 23 degrees at 1pm, 22 degrees at 4pm, and 17 degrees at 7pm. Wind chills in the single digits this afternoon, near zero this evening. For DEP, the 4am sys avg is 46 degrees. Forecast calls for 50 degrees at 7am, 29 degrees at 1pm, 25 degrees at 4pm and 22 degrees at 7pm. Wind chills in the upper single digits and low teens this afternoon, then single digits this evening.

Forecast for Sat AM has trended a couple of degrees colder. Lowered DEC from 12 degrees to 10 degrees and DEP from 15 degrees to 13 degrees. Risk is a couple of degrees on either side. There is about 6 degrees of temperature spread across the models for DEC and DEP at 7am tomorrow. Leaned the forecast slightly to the colder side of the mean. Wind chills tonight through tomorrow morning will be -10F to -20F across the mountains/foothills and -5F to 0F elsewhere.

No significant changes to the temperature forecasts for Sat PM – Tuesday. Sun AM in the middle teens.

Note: At this time, Duke Meteorology is forecasting a DEC system average low temperature of 10 degrees on the morning of Saturday 12/24 and a DEP system average low temperature of 13 degrees on the morning of Saturday 12/24. For Sunday 12/25, Duke Meteorology is forecasting a DEC system average low temperature of 15 degrees, and a DEP system average low temperature of 16 degrees.

A forecast discussion update sent at 3:56pm on 12/23:

Cold air hasn't pushed into the region as rapidly this afternoon as the model guidance suggested this morning. At 3pm, the DEC sys avg is 27 degrees while the DEP sys avg is 32 degrees. With sustained wind speeds at 15 to 20 mph, wind chills are currently in the single digits across western NC, teens across central NC and 20s across eastern NC. Once the sun starts going down after 4pm, expecting temperatures to fall steadily this evening and still looking at DEC lows in the upper single digits and

lower teens and DEP lows in the lower and middle teens. Breezy conditions will continue overnight. Wind chills across western NC will drop to -10F to -20F and across the Piedmont will be -5F to +5F. Saturday will be sunny but cold with daytime highs from the middle 20s northwest to lower 30s southeast.

*Regarding the threat of outage-producing winds on Friday:*

The daily weather outlook was sent at 6:26am on 12/23:

Significant power outages are expected across the Carolinas Service Area through this evening due to wind gusts up to 55 mph across the Mountain Zone and wind gusts of 40 to 50 mph across the other zones. Peak gusts east of the mountains/foothills will occur this morning as the cold front sweeps across the region. Storm details can be found below. Additional scattered power outages are likely across the Mountain Zone tonight through Saturday due to wind gusts up to 45 mph. Otherwise, weather-related outages are not expected Saturday – Tuesday. Dangerous wind chills will prevail across the region this afternoon through tomorrow morning.

As of 6am, widespread power outages have already developed across the Upstate Zone due to wind gusts of 35 to 45 mph. Scattered outages have already occurred across the Mountain Zone and the Central Zone. The Charlotte airport had a peak wind gust of 46 mph at 5:45am.

A weather outlook update sent at 8:15am on 12/23:

For the next several hours, the strongest peak wind gusts will occur east of a line from Raleigh, NC to Florence, SC. After 10am, the strongest peak wind gusts are expected only across the eastern half of Coastal Zone. By 12pm, the strongest peak wind gusts will have moved offshore.

A weather outlook update sent at 10:58am on 12/23:

Could see some wind gusts of 45 mph along the immediate coastline from Wilmington to Morehead City over the next hour, otherwise the peak wind gust threat has ended outside of the mountains. Across the central and eastern Carolinas, sustained winds 15 to 25 mph with gusts 30 to 40 mph through the afternoon hours. There continues to be a Wind Advisory for the NC Mountains due to the threat of wind gusts 45-55 mph.

A weather outlook update sent at 4:12pm on 12/23:

Breezy conditions continue across the Carolinas with sustained winds 15 to 20 mph across the western/central Carolinas and 20 to 25 mph across the eastern Carolinas. Wind gusts are generally 25 to 35 mph, though we are still seeing a few gusts around 40 mph across far eastern NC. A high wind warning remains in effect for the NC mountains until 7pm this evening (for gusts up to 55 mph) then a wind advisory will replace it through 3am Saturday (for gusts up to 45 mph). Farther east, a wind advisory remains in effect until 7pm this evening (for gusts up to 45 mph) and then the gustiness will diminish through the rest of the evening.

Wind chills overnight will be -10F to -25F across the NC mountains/foothills and -5F to +5F elsewhere.

Morning low temps will be near zero in the mountains/foothills and middle single digits to middle teens elsewhere. Saturday will be sunny but cold with high temps ranging from the middle 20s northwest to lower 30s southeast.