

# Charging Ahead: Navigating North Carolina's Energy Transformation

A reliable path to a cleaner future



# The Energy Transition

2022

44% CO<sub>2</sub> reduction



15,000 MW  
natural gas

2030

50% Scope 1  
reduction target

Net-zero methane  
target for LDC



20,000 MW  
renewables

2035

50% Scope 2 & 3  
reduction target



Out of coal

2040

80% Scope 1  
reduction



More energy storage  
Increasing ZELFRs  
Growing renewables

2050

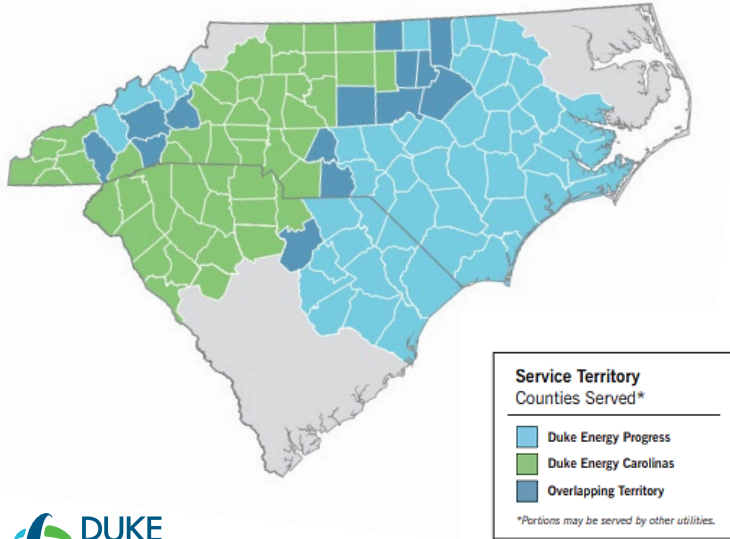
Net-zero  
Scope 1,2,3 target



Underpinned by grid investments, affordability and reliability

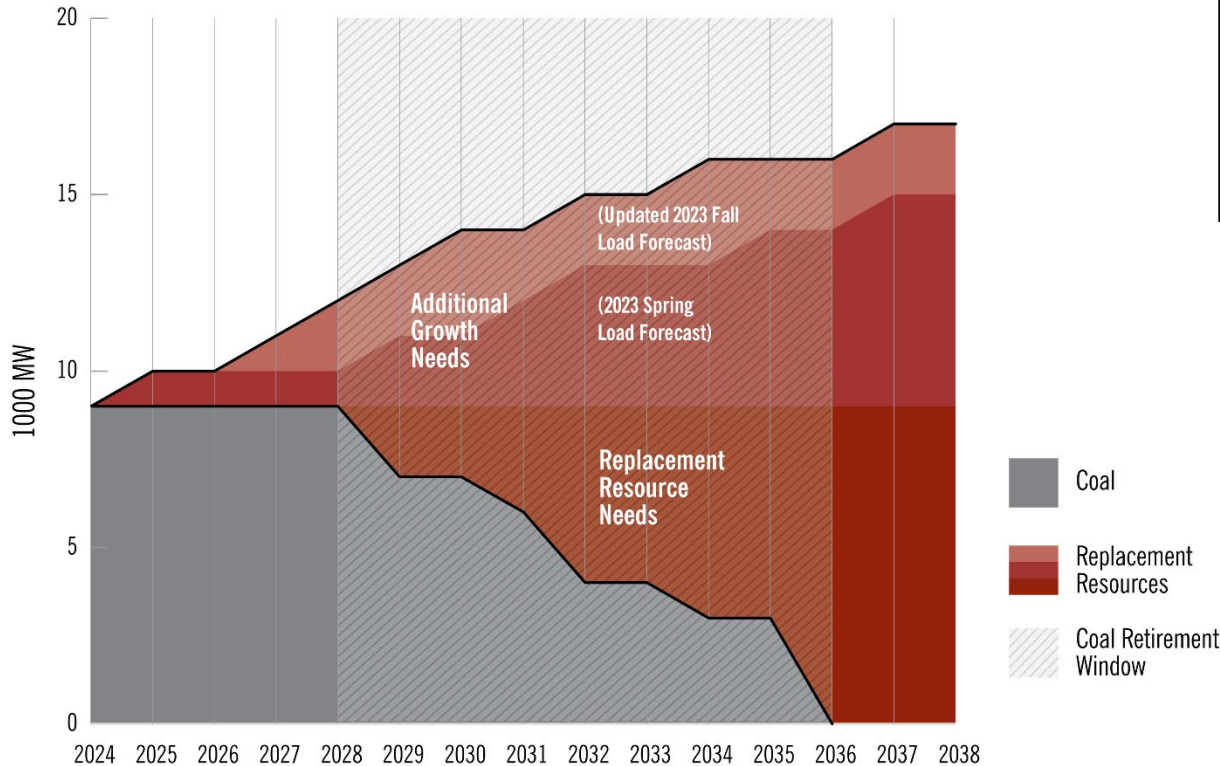
# Resource planning for a dual-state system

Carolinas Service Territory



- Duke Energy owns more than 30 GW of power generating capacity across our 53,200 square mile service territory serving 4.5 million retail customers in the Carolinas
- Energy needs are growing across the Carolinas, placing new demands on the system even as we transition to cleaner energy sources
- As we make our transition, we must protect reliability and affordability for customers
- Planning must meet the energy and policy needs of both North Carolina and South Carolina

# Load Growth and Retiring Coal Create Significant Capacity Resource Need



**Peak load growth by 2030 is eight times the growth we projected just two years ago.**

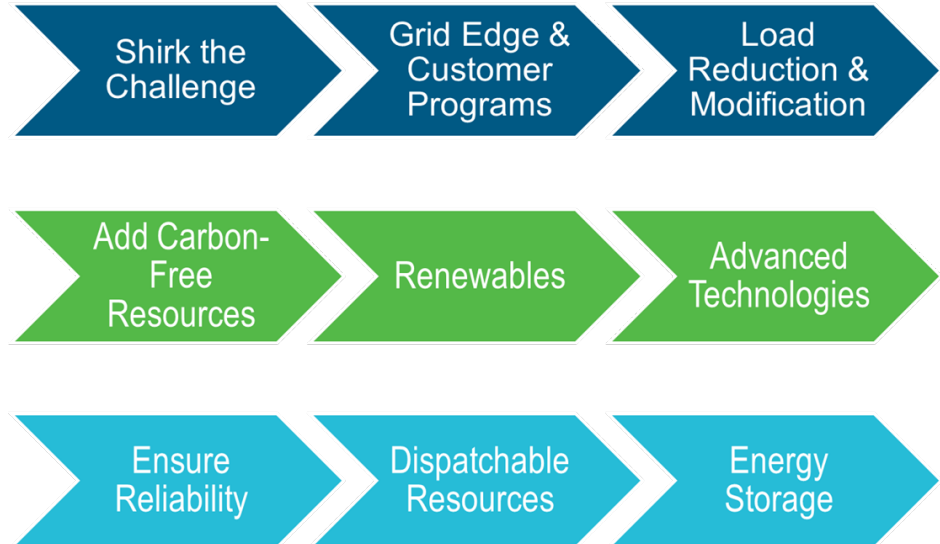
## Drivers for demand growth

- Economic development successes
- Population growth
- Electric vehicle adoption

# Our Strategy Moving Forward

**Our vision is to seamlessly deploy grid edge resources at scale**, as a safe, affordable, reliable, and clean component of Duke's energy portfolio comparable to central station assets.

## Three-pronged approach to planning:

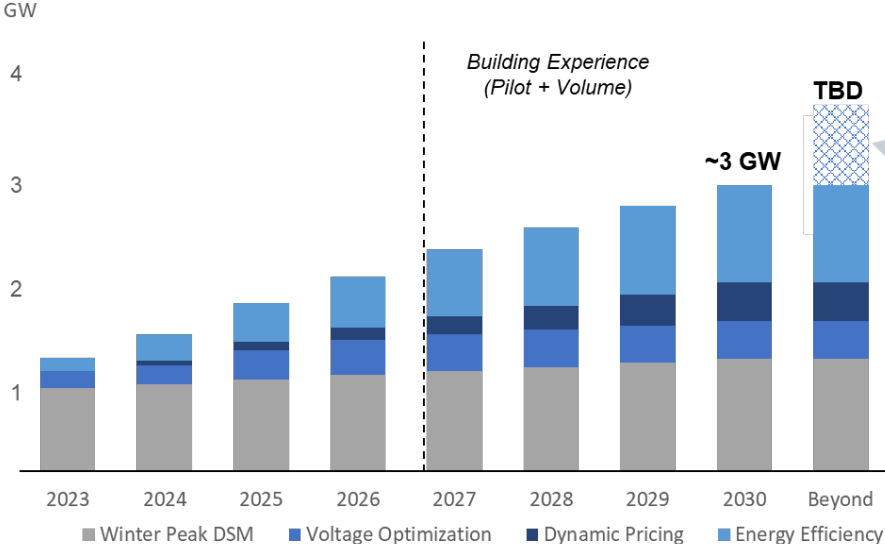


# Grid Edge Stairsteps







Duke Energy is committed to delivering ~3 GW in winter peak capacity in the Carolinas as part of the CPIRP by 2030

...and evaluating emerging opportunities

**Grid Edge Capacity By Resource – 2022 N.C. Carbon Plan  
Integrated Resource Plan (CPIRP)  
2022 – 2030 Glidepath (Winter Peak, GW)**

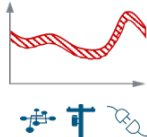


**Emerging Opportunities**

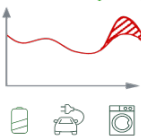
-  Peak Time Messaging
-  Smart Inverters
-  BTM storage
-  Managed Charging
-  Vehicle to Grid
-  High Efficiency / Dual Fuel Heat Pumps

# Ecosystems

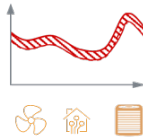
Voltage Optimization



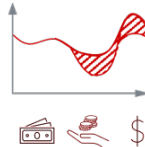
Demand Response & Distributed Capacity



Energy Efficiency

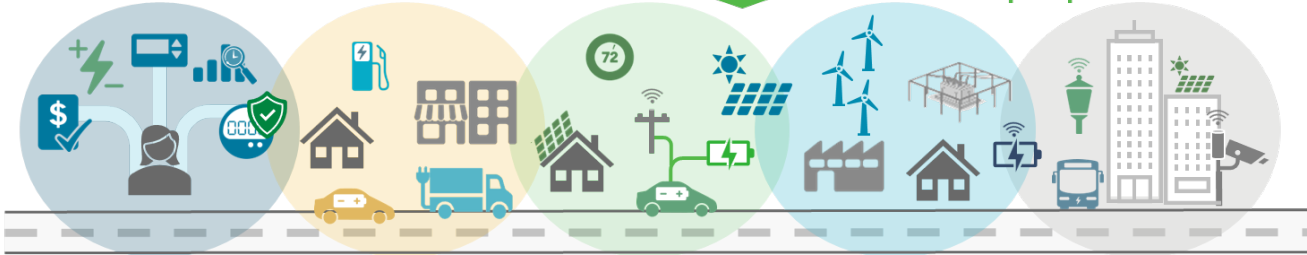


Rates



System perspective

Customer perspective



**Bill Management**

*Helps customers better manage their energy bill while enabling clean capacity*

**Electric Vehicle Solutions**

*Simplifying the adoption of electric vehicles while proactively readying the grid for growth*

**Net-Zero Home & Business**

*Helps existing and new homes and businesses achieve their clean, smart energy goals*

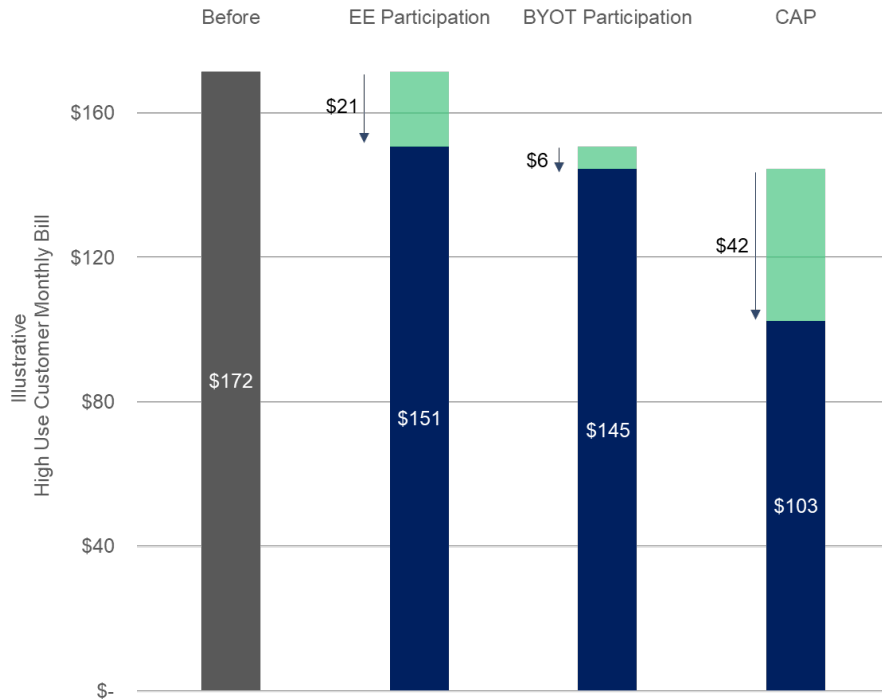
**Clean Energy Customer Programs**

*Helping customers to connect to clean energy solutions and renewable options*

**Connected Communities**

*Leveraging our infrastructure to deliver smart, digitally connected solutions*

# Helping the Most Vulnerable – Illustrative Example



- ✓ Bundle could lower the customer's average monthly bill by ~\$70 per month
- ✓ Reduces the electricity burden of a household with \$30k income from 6.9% to 4.1%
- ✓ Energy Efficiency participation can be through a range of programs:
  - Weatherization
  - High Energy Use Pilot
  - Tariffed-on-Bill + incentives based on "as-found" baseline
- ✓ Additional savings are likely if customers adopt and respond to TOU rates



