NORTH CAROLINA
Climate Pollution
REDUCTION GRANT

# *Comprehensive Climate Action Plan (CCAP) Public Information Session*

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*NC DEQ State Energy Office*
*September 11, 2025*

# *Information Session Process and Expectations*

- This meeting is being recorded.  The recording and the slides from this presentation will be made available on the CPRG website.
- The purpose of this CCAP Public Information Session is to provide context and history about how the CCAP was developed.
- **NO QUESTIONS OR COMMENTS WILL ADDRESSED DURING THIS INFORMATION SESSION**
- A press release was sent out on Friday, 9/5 and contains a link to the draft CCAP document and an online **form** designed to capture your insight and feedback.  The information can also be found on our CPRG website, under Climate Plans:

**https://www.deq.nc.gov/energy-climate/state-energy-office/inflation-reduction-act/climate-pollution-reduction-grant/comprehensive-climate-action-plan**

- Input can also be emailed to cprg@deq.nc.gov with "**CPRG Comment"** in the subject line. Input is being accepted now through October 6, 2025.
- Input can be submitted using the form following the QR code.

# *Information Session Process and Expectations*

- Public feedback will be collected, reviewed and documented in accordance with the laws and regulations of the NCDEQ and EPA as required.
- All information from this process is considered public information.
- Substantive input may be included in the final CCAP document.
- Input should be concise and as brief as possible to convey the viewpoint of the commenter.
- Input that conveys similar viewpoints will be addressed as one. Input that are exact replicates will be addressed as one.
- Reponses to topics in the comments received will be addressed on the CPRG website along with the final publication of the CCAP.

# *Agenda*

- Introductions
- Climate Pollution Reduction Grant (CPRG)
- Timeline
- Comprehensive Climate Action Plan (CCAP) Development
- Public Engagement and Outreach
- Workforce Development
- Preliminary CCAP Results
- Next Steps

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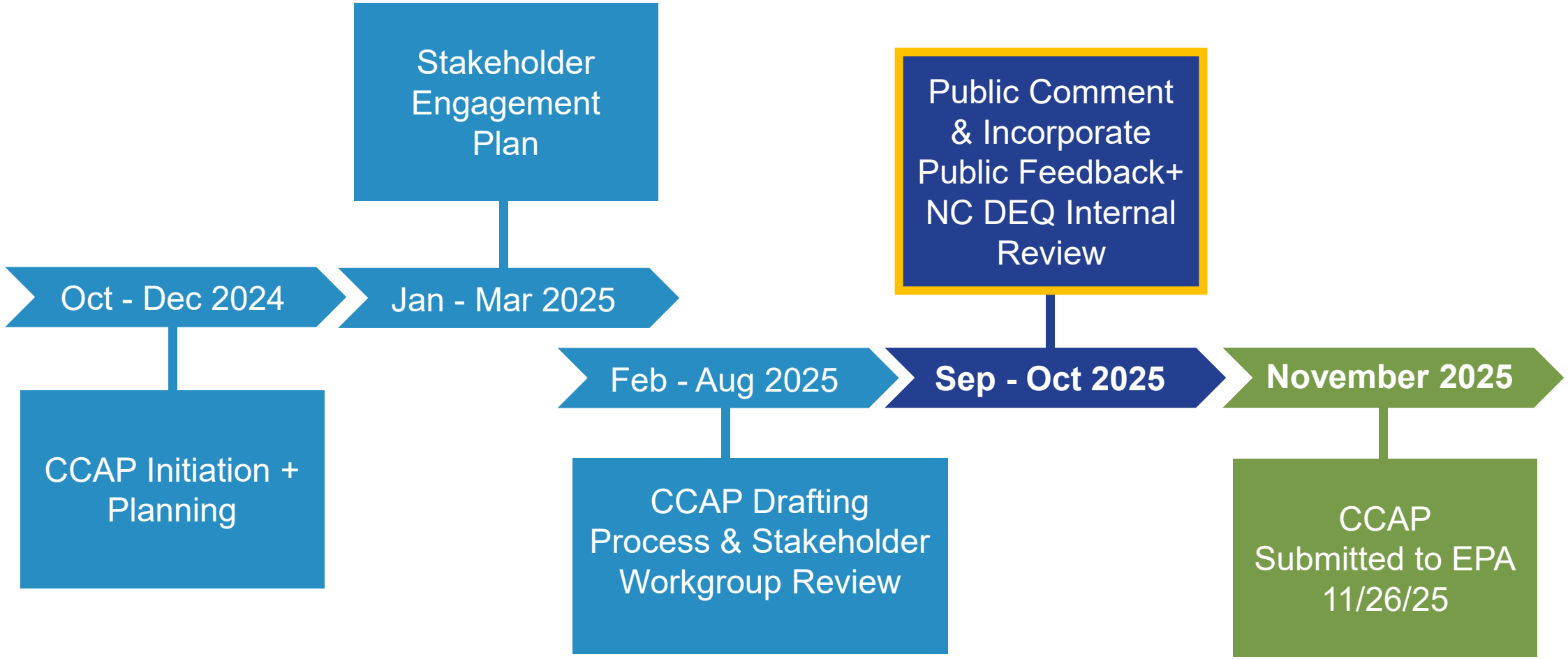
# *Climate Pollution Reduction Grant (CPRG) Program Overview*

- Part of the federal Inflation Reduction Act
- Provides states, local governments, territories and tribes with funds
  - to develop and implement climate action plans
  - to reduce greenhouse gas emissions and other harmful air pollutants
- In 2023, North Carolina was awarded $3 million from the U.S. Environmental Protection Agency (EPA) for the planning phase of the CPRG.  2 NC MSA's also received $1M each - Centralina and Central Pines
- The North Carolina CPRG planning project is an interagency effort with the Department of Transportation, Department of Commerce, Department of Natural and Cultural Resources and DEQ serving as lead.  This collaboration also included the MSA's.
- There are 3 Phases in the CPRG project
  - We are in Phase 3 – the Comprehensive Climate Action Plan (CCAP)

# *CCAP Planning Timeline and Deliverables*



# *Comprehensive Climate Action Plan (CCAP) – Phase 3*

- Phase 3 is the Comprehensive Climate Action Plan (CCAP), incorporates near-term and long-term GHG emission reduction targets and identifies GHG reduction measures that are feasible, implementable and measurable and that could achieve these goals.

- The CCAP is a narrative climate planning report that provides an overview of GHG sources/sinks and sectors following industry standard protocols.

- The CCAP includes benefits for communities experiencing high energy burdens who also live in rural areas, have low incomes, or limited access to resources.

# *Why the PCAP and the CCAP are Important*

## 1. Required by EPA:

Both plans are part of the Climate Pollution Reduction Grant (CPRG) program. States must develop a Priority Climate Action Plan (PCAP) and a Comprehensive Climate Action Plan (CCAP) to remain eligible for federal funding.

## 2. Opportunities for Further Funding:

Having these plans in place positions North Carolina to compete for federal grants that can support clean energy, infrastructure, and workforce development.

## 3. Roadmap for Action:

- The PCAP (completed in 2024) identified the top near-term, high-impact strategies to reduce greenhouse gases.
- The CCAP (due December 2025) expands this into a long-term strategy across all sectors—transportation, electricity, buildings, waste, and natural & working lands.

# *Why the PCAP and the CCAP are Important*

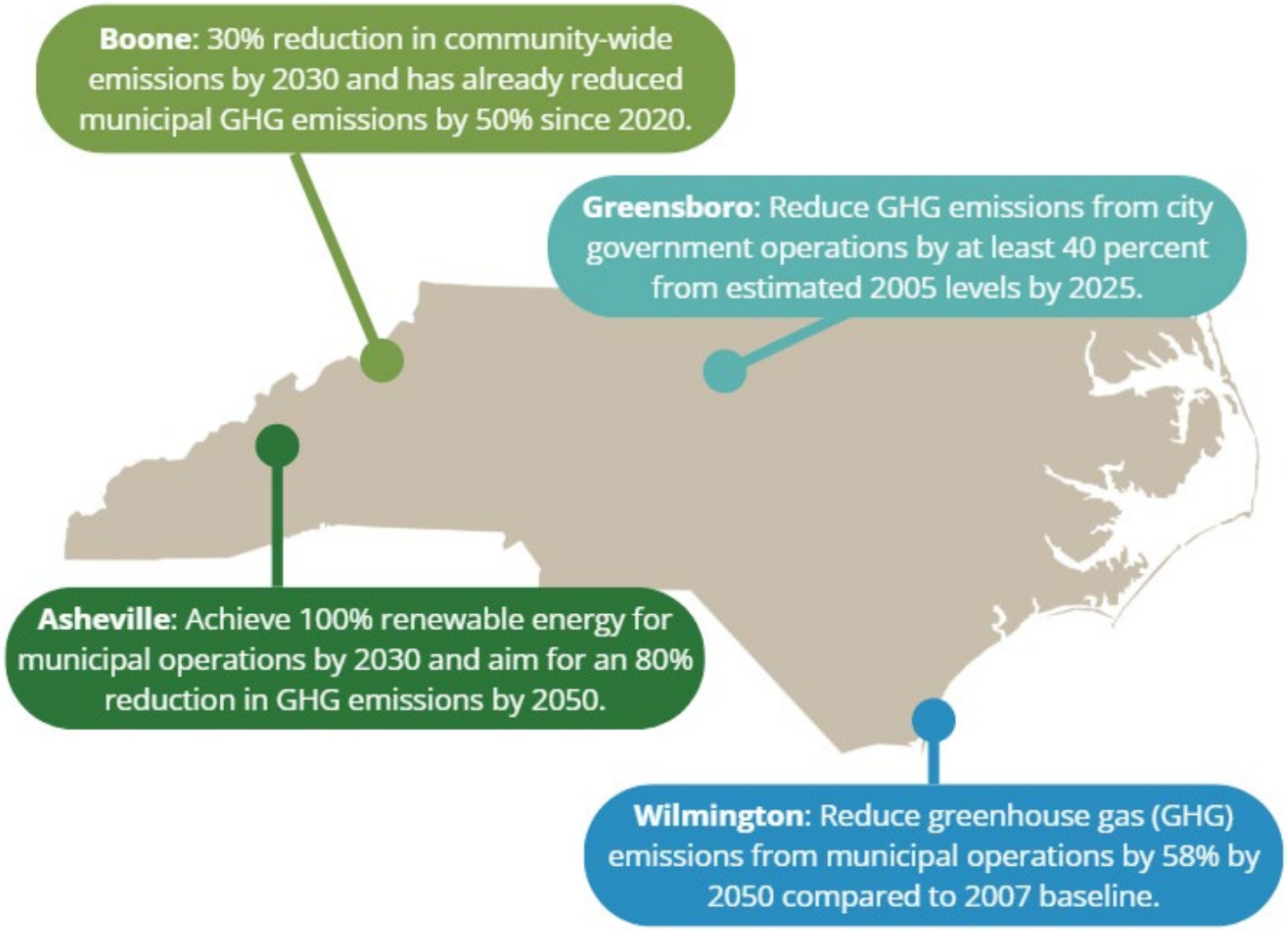
4. **Highlights Economic and Workforce Benefits:**

   Planning helps NC align clean energy growth with training programs, ensuring NC residents are prepared for the new jobs being created.

5. **Community Focus:**

   The plans help direct investment toward rural, low-income, and energy-burdened communities, where energy costs and workforce challenges are greatest.

# *NC GHG Reduction Targets in Local Jurisdictions*

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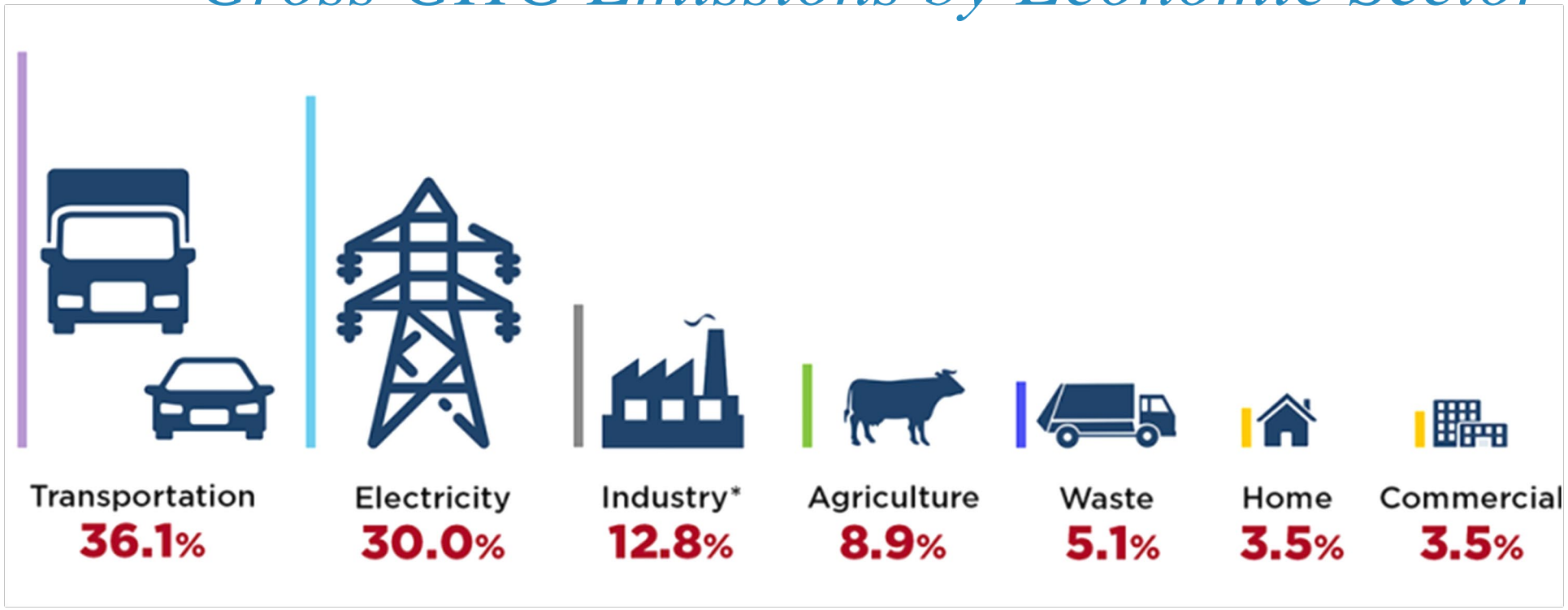
# *CCAP Development Actions*

| CCAP Action Items | Status |
|---|---|
| 1. Define Plan Scope & Understand Landscape | COMPLETE defined in PCAP & Implementation Grant |
| 2. Plan for and Initiate Outreach & Engagement | COMPLETE |
| 3. Develop GHG Inventory | COMPLETE using January 2024 report |
| 4. Develop Business-As-Usual Scenario* | COMPLETE using January 2024 report |
| 5. Set Targets (e.g. 2030 and 2050) | COMPLETE using EO80 + EPA targets |
| 6. Identify and Screen GHG Reduction measures | COMPLETE |
| 7. Assess GHG Reduction Measures | COMPLETE |
| 8. Plan to Implement | COMPLETE |
| 9. Finalize, Distribute, and Promote the Plan | Due to EPA Dec 1, 2025 |
| 10. Report on progress | Ongoing 2026 - 2027 |

BAU: Projections of GHG emissions (and sinks if feasible) in absence of CCAP measures. Developed for the 2020 GHG Inventory by NC Division of Air Quality.

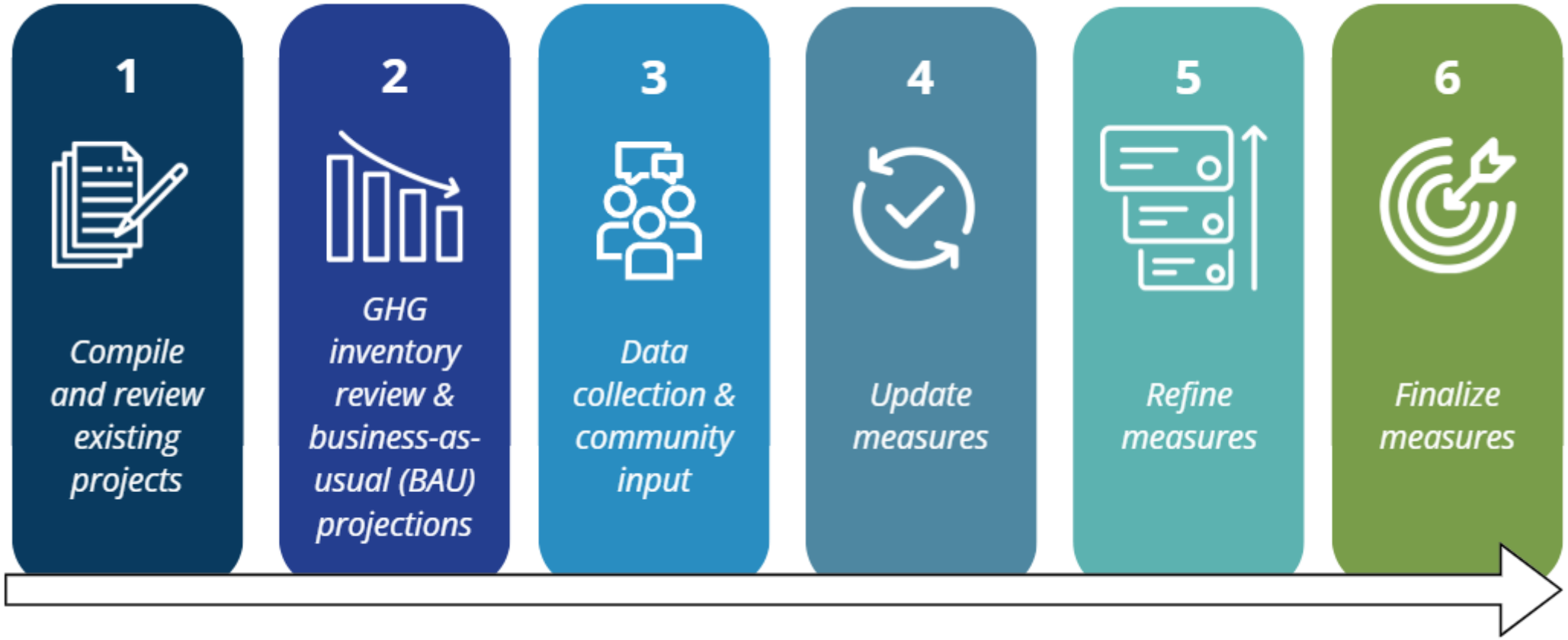
# *Gross GHG Emissions by Economic Sector in 2020*




**Sources** **Sinks**

NC Greenhouse Gas Inventory Published January 2024.
https://www.deq.nc.gov/energy-climate/climate-change/greenhouse-gas-inventory

# CCAP Measure Development Steps



# *Meaningful Engagement*

The engagement process generated strong participation and yielded a range of valuable insights that informed both the structure and substance of the CCAP.

Key participation outcomes:

- 5 In-person Engagement Sessions (Pembroke, Fayetteville, Morganton, Roanoke Rapids, and Wilmington
- 141 individuals registered for at least one public session
- 48 organizations were represented, including municipalities, counties, tribal organizations, utilities, non-profits, and academic institutions
- 110 survey responses provided project ideas and comments
- 1,340 unique visitors accessed the CPRG webpage

# *Meaningful Engagement*

Spotlight Interviews provided deeper insight into how local organizations and individuals are already taking steps to reduce greenhouse gas emissions.

**Working Landscapes**: https://workinglandscapesnc.org/

"We're working hard to build a resilient rural economy, with thriving farms, vibrant towns, and a healthy environment."

**Northern Circle Indian Housing Authority**: https://nciha.org/

Established in 1979 to work on behalf of 8 Federally Recognized Tribes in Northern California to carry out housing related programs.

**Sustainable Sandhills**: https://sustainablesandhills.org/

The region's primary champion of sustainability

# *Meaningful Engagement Spotlight Interviews*

# *Workforce Analysis*

## ENERGY JOB GROWTH IN NC

NC Department of Commerce analysis shows strong job potential if the state meets climate goals by 2050.

1. About **9,650 new jobs** per year across diverse energy sectors:
    - Offshore Wind – ~5,500 jobs/year
    - Solar – ~3,000 jobs/year
    - Electric Vehicles – ~1,000 jobs/year
    - Building Efficiency – ~150 jobs/year

2. Together these sectors could drive **$49 billion** in economic impact by 2050.

3. Most in-demand jobs: construction, electricians, HVAC technicians, solar installers, energy auditors.

4. Current gap: **8,300** workers in installation, maintenance, and repair roles.

# *Workforce Analysis*

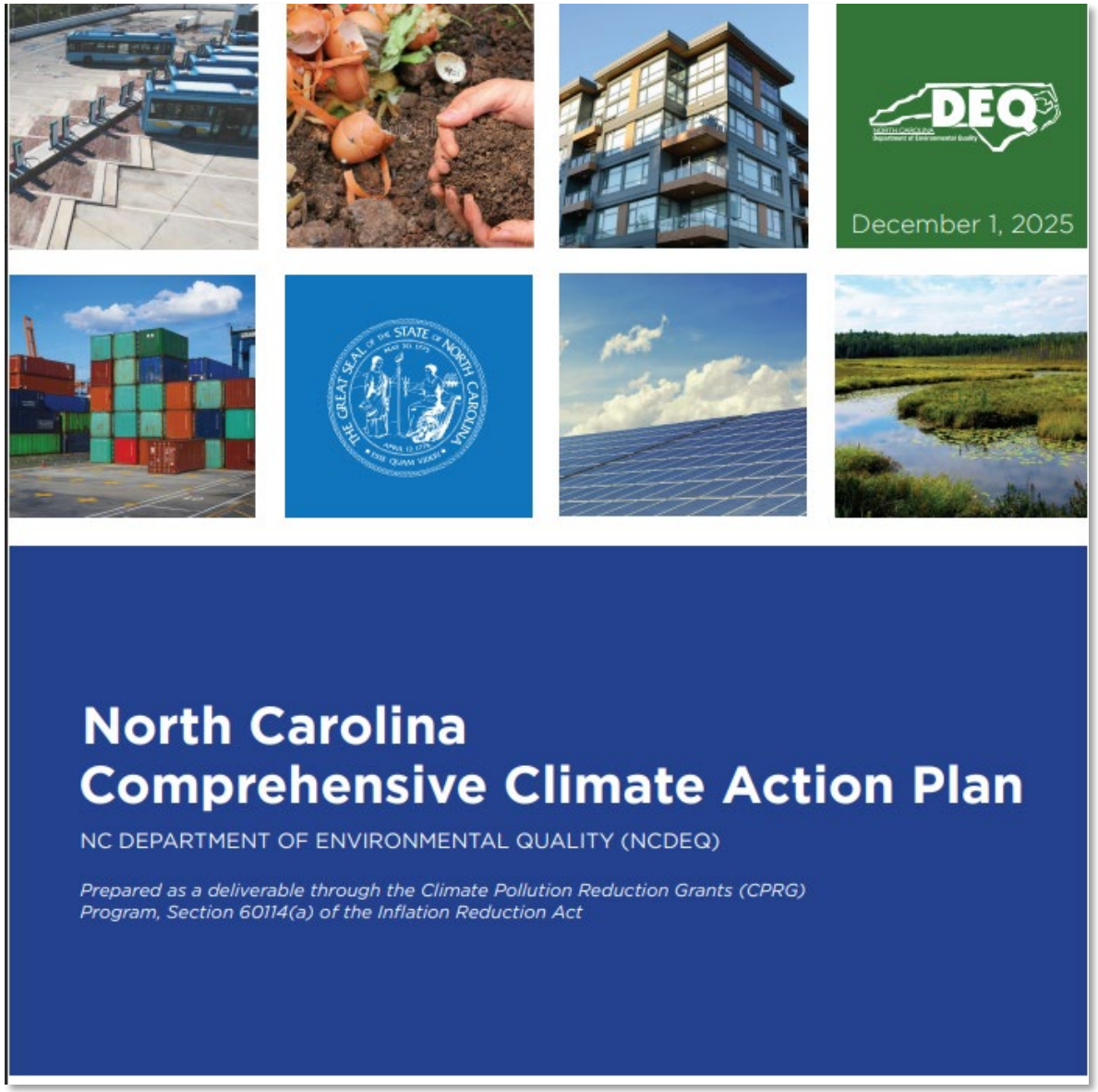
## PREPARING THE NC WORKFORCE

NC Department of Commerce analysis shows strong job potential if the state meets climate goals by 2050.

1. **Training resources already in place:**
   - 58 community colleges and 70+ NCWorks Career Centers
   - ApprenticeshipNC, NCEdge, Certified Career Pathways
   - Industry partnerships (AdvanceNC, EVeryone Charging Forward, NC Battery Industry Partnership)

2. **Expand Opportunities:**
   - 750,000+ households pay over $250/month for electricity, with highest burdens in eastern NC
   - Barriers include transportation, childcare, and job access in rural areas

3. **Next steps:**
   - Align training with CCAP measures in buildings, transportation, electricity, and natural lands
   - Expand opportunities in rural, low-income, and high energy-burdened communities
   - Continue DEQ–Commerce coordination to ensure workforce is ready for clean energy transition

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# *CCAP GHG Emission Targets and Results*

**Short-Term Target:** Reduce economy-wide GHG emissions to 50% below 2005 levels by 2030.

**Long-Term Target:** Achieve net-zero economy-wide GHG emissions as soon as possible, but no later than 2050.

- *The state is on track to meet its goal of reducing GHG emissions by 50 percent below 2005 levels by 2030.*
  - This outcome is driven by sector-specific strategies such as increasing options for renewable electricity, improving energy efficiency in buildings, expanding the use of electric vehicles, and expanding land-based carbon sequestration.
- Reaching net-zero by 2050, however, will require additional steps beyond current projects and funding.

# CCAP Measures by Sector

| Sector | Measure | Description |
|---|---|---|
| Transportation | Measure 1 | Increase the number of medium- and heavy-duty (MHD) zero emission and electric vehicles through programs to replace diesel emission vehicles. |
| | Measure 2 | Identify, install, and maintain a public electric vehicle charging network to support increased EV adoption statewide. |
| | Measure 3 | Implement programs to increase efficiency and reduce GHG emissions at deep water and inland ports. |
| | Measure 4 | Support regional strategies to reduce vehicle miles traveled (VMT). (Unfunded) |
| Electricity | Measure 5 | Increase the amount of electricity generated by renewable resources in North Carolina. |
| | Measure 6 | Implement measures to increase energy resiliency in North Carolina communities: Microgrids for North Carolina Resilience. |
| Commercial & Residential Buildings | Measure 7 | Reduce per square foot energy usage in residential buildings in North Carolina. |
| | Measure 8 | Decarbonize buildings in North Carolina through replacement of fossil fuel combustion sources and other greenhouse gas emissions. |
| Industry | Measure 9 | Industrial Decarbonization Planning and Opportunity Analysis. (Unfunded) |
| Waste | Measure 10 | Reduce food waste entering the waste management system to reduce the methane emissions from food waste landfilling, direct food to communities in need, and create organic resources through composting or digestion. |
| | Measure 11 | Decarbonize waste collection to reduce GHG emissions during the collection and transport of wastes through electrification of fleets or through engine conversion from diesel to electric motors. |
| | Measure 12 | Reduce landfill gas emissions through improved landfill operations to collect gas more efficiently and earlier in a landfill life. |
| Natural Working Lands | Measure 13 | Coastal Habitat and Peatlands |
| | Measure 14 | Protect, use, and develop agricultural and forest land. |

# *Transportation Measures 1 – 4*

## *Total GHG reductions in $MTCO_2e$ that can be implemented*

| Measure Number and Abbreviated Title | Short-Term Implementation Scenario Year 2030 Emissions ($MTCO_2e$) | Long-Term Implementation Scenario Year 2050 Emissions ($MTCO_2e$) |
|---|---|---|
| 1 – Medium & Heavy-duty vehicles | 37,339 | 186,696 |
| 2 – EV Infrastructure | 15,337 | 76,684 |
| 3 - Ports | 11,448 | 18,078 |
| **Total** | **64,124** | **281,458** |

| UNFUNDED* Measure Number-Title | Short-Term Implementation Scenario Year 2030 Emissions ($MTCO_2e$) | Long-Term Implementation Scenario Year 2050 Emissions ($MTCO_2e$) |
|---|---|---|
| 2 – EV Adoption | 2,570,000 | 58,800,000 |
| 4 – Bike / Ped Infrastructure | 4,000 | 20,000 |
| **Total** | **2,574,000** | **58,820,000** |

*This table shows the additional GHG reductions that would be achieved if these measures received funding.

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# *Key Take Aways for Transportation*

- NCDEQ's three funded transportation measures will reduce GHG emissions by 0.1% by 2030 and 0.8% by 2050.
- NC plans to increase the number of low carbon emitting and electric vehicles such as school and transit buses, garbage trucks, emergency vehicles, and off and on road construction vehicles.
  - Cost: $83 million
- Expand vehicle charging network with $14 million to support statewide EV adoption.
- Improve energy efficiency with freight shipping at NC ports by upgrading technology at freight terminals and ports, and expanding more efficient freight corridors across the state, and additionally coordinating with private industry to increase equipment electrification.
  - Cost: $117 million

# *Electricity Measures 6 & 7*

## *Total GHG reductions in $MTCO_2e$ that can be implemented*

| Measure Number-Title | Short-Term Implementation Scenario Year 2030 Emissions ($MTCO_2e$) | Long-Term Implementation Scenario Year 2050 Emissions ($MTCO_2e$) |
|---|---|---|
| 5 – Distributed and Renewable Resources | 345,498 | 458,691 |
| 6 - Microgrids | 13,157 | 65,784 |
| **Total** | **358,655** | **524,475** |

# *Key Take Aways for Electricity*

- NCDEQ's two electricity measures will reduce GHG emissions by 1.3% by 2030 and 6.2% by 2050.
- Increase the amount of electricity generated by renewables such as off and on-shore wind, geothermal, and solar energy.
  - Cost: $384 million
- Improve energy resiliency in NC communities by implementing temporary microgrid solutions designed to bring power, water purification, and communications.
  - Cost: $5.8 million

# *Commercial & Residential Buildings*

## *Total GHG reductions in $MTCO_2e$ that can be implemented*

| Measure Number-Title | Short-Term Implementation Scenario Year 2030 Emissions ($MTCO_2e$) | Long-Term Implementation Scenario Year 2050 Emissions ($MTCO_2e$) |
|---|---|---|
| 7 - Reduce per square foot energy usage in residential buildings in NC | 90,876 | 736,196 |
| 8 - Decarbonize buildings in NC | 8,080,000 | 34,750,000 |
| **Total** | **8,170,876** | **35,486,196** |

# *Key Take Aways for Buildings*

- NCDEQ's two measures designated for buildings will collectively reduce GHG emissions by 38.7% by 2030 and 156.4% by 2050.
- Reduce the energy burden for low-income, rural households by providing services to install insulation, air sealing, and HVAC upgrades. In addition, this measure funds performance-based home retrofit strategies for further energy savings.
  - Cost: $217 million
- Increase energy efficiency in state-owned buildings (government, commercial, industrial, institutional, and residential) by conducting energy audits, equipment upgrade installation, improve energy management systems, weatherization, training, materials management, and recycling.
  - Cost: $25 million

# *Industry Measure 9*

## Key Take Aways

- Estimates derived from the PCAP were used to estimate GHG reductions. This measure can be more fully developed in the future.
- The PCAP estimated these strategies could reduce emissions by up to 2.1 $MMTCO_2e$ in 2030 and 10.5 $MMTCO_2e$ in 2050, relative to BAU projections with a cost of $15 million.
- Industrial stakeholders in NC have emphasized that capital investments in electrification, low-carbon fuels, and process improvements are unlikely to occur unless they result in near-term cost savings or are offset by financial incentives.
- Additionally, lack of skilled personnel to maintain new systems is a challenge.

# *Waste Measure 10 – 12*

## *Total GHG reductions in $MTCO_2e$ that can be implemented*

| Measure Number-Title | Short-Term Implementation Scenario Year 2030 Emissions ($MTCO_2e$) | Long-Term Implementation Scenario Year 2050 Emissions ($MTCO_2e$) |
|---|---|---|
| 10 - Reduce food waste | 1,234,674.63 | 1,234,674.63 |
| 12 - Reduce landfill gas emissions | 36,453 | 781,359 |
| **Total** | **1,272,127.63** | **2,016,033.63** |

NOTE: Emissions for Measure 11 are accounted for in Transportation, Measure 1.

# *Key Take Aways for Waste*

- NCDEQ's three measures modeled for the waste sector have been projected to reduce GHG emissions by 16.5% by 2030 and 15.5% by 2050.
- Divert food from the waste system to reduce methane emissions by installing food donation refrigerators in schools, transferring excess food to food banks, expanding compost facility capacity and improving education.
- Refuse truck fleet change-over to low carbon emitting or EVs (the GHG emissions for this measure are included in the Transportation sector Measure 1).
- Reduce landfill gas emissions through gas collection systems and landfill covers.

# *Natural Working Lands*

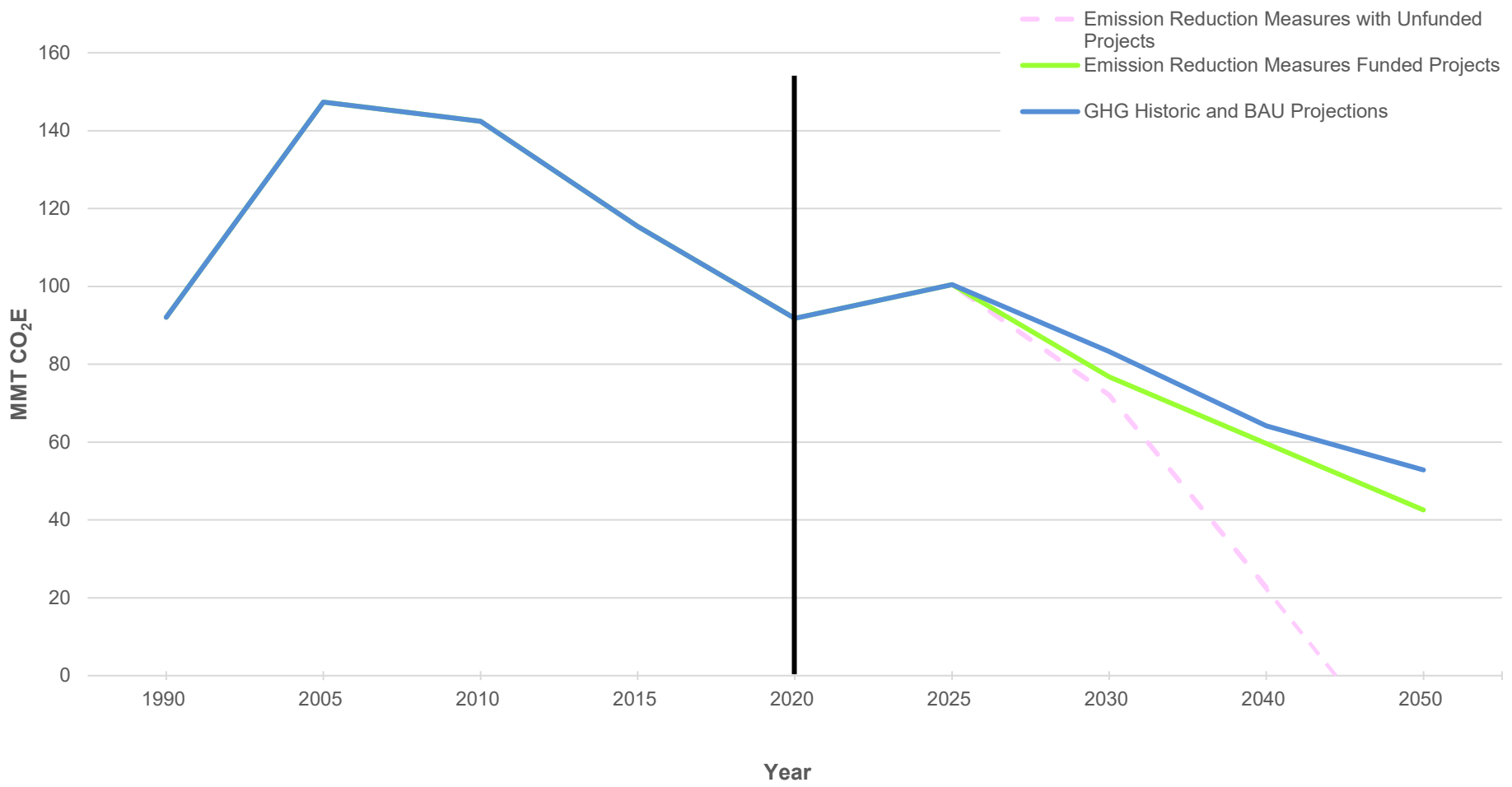
## *Total GHG emissions **offset** in MTCO2e that can be implemented*

| Measure Number-Title | 2030 ($MTCO_2e$) | 2050 ($MTCO_2e$) |
|---|---|---|
| 13 - Coastal Habitat Enhancement and Peatlands Restoration | 2,340,539.4 | 19,215,883.2 |
| 14 - Protect, Use, and Develop Agricultural and Forest Land | 1,021,710.0 | 8,811,294.8 |
| **Total** | **3,362,249.4** | **28,027,178** |

# *Key Take Aways for Natural Working Lands (NWL)*

- NCDNCR has developed and modeled two measures for the NWL sector that collectively will offset GHG emissions by 7.1% by 2030 and 59.3% by 2050.
- Implementing coastal habitat and peatland restoration projects will result in sequestration of 2,340,539 MTCO2e in 2030 and 19,215,883 MTCO2e in 2050. Restoration projects will also protect two national seashores from erosion, bolster flood resilience, enhance water quality and support local communities.
- Encouraging the protection, use, and restoration of agricultural and forested land and promote sustainable forestry management practices. This initiative is expected to yield 10,000 acres of climate-smart forestry and soil health practices implemented between 2025 and 2030.

# *Historical and projected economywide GHG emissions*



# *Table 6. Implementation Scenario Emissions by Sector ($MMTCO_2e$)*

| Sector | 2005 Base Year Emissions (MMT $CO_2e$) | 2020 Emissions (MMT CO2e) | Short-Term Implementation Scenario Year 2030 Emissions (MMT CO2e) | Long-Term Implementation Scenario Year 2050 Emissions (MMT CO2e) |
|---|---|---|---|---|
| Electricity Generation | 82.66 | 41.77 | 26.35 | 7.98 |
| Commercial and Residential Buildings | 24.97 | 19.01 | 12.97 | -12.80** |
| Transportation | 58.56 | 50.35 | 52.01 | 35.56 |
| Agriculture* | 12.63 | 12.46 | 12.46 | 13.28 |
| Waste and Materials Management | 7.21 | 7.17 | 6.21 | 5.97 |
| Industry | 4.87 | 7.22 | 9.00 | 10.12 |
| Natural Gas and Oil Systems* | 1.53 | 1.48 | 1.65 | 1.65 |
| Natural and Working Lands | -45.08 | -47.68 | -43.87 | -19.20 |
| **Total NET Emissions** | **147.34** | **91.77** | **76.78** | **42.56** |

*No measures were developed for this sector; GHGs reflect BAU projections for 2030 + 2050
**The estimated emission reductions for this year were greater than the BAU for the same year.

# *Key Benefits for Businesses And Residents*

## Health

Reductions in GHG's results in reductions in other air pollutants like NOX, PM2.5 and SO2. These pollutants affect the respiratory and cardiovascular systems and especially affect people with asthma, particularly children.

## Economy

Opportunities for residents to save money from converting to an electric vehicle, using solar power, and improving their homesteads by weatherizing and purchasing electric equipment are likely across the transportation, electricity and building sectors.

## Workforce

Notably, clean energy jobs for workers are in high demand and are anticipated to continue especially those for the wind, solar, electric vehicle construction and repair and building efficiency (construction) sectors. The NC Department of Commerce estimated that an additional 10,000 jobs could be created by 2050 to support the clean energy economy.

## Resiliency

Reducing GHG's improves resilience and reliability of NC's energy system, minimizing the economic and social toll of energy disruptions. By preventing or limiting the length of power outages, businesses avoid costly downtime, and residents maintain access to essential services. Resilient infrastructure will also enhance public safety, ensuring critical facilities like hospitals remain operational during crises, ultimately reducing mortality rates during extreme weather events.

## Natural Working Lands

At least 70% of North Carolina's peatlands have been drained, which causes them to become carbon sources rather than carbon sinks and leads to land subsidence. Rewetting hydrologically altered peatlands helps to reduce CO2 emissions from degraded peatlands and helps to prevent soil loss and catastrophic fires that can endanger lives and property and release extensive GHGs. Restoring peatlands already in public ownership helps reduce these risks.

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# *NC Pathway to Success*

- Strengthening resiliency through the expansion of microgrids and modernizing grid infrastructure to protect communities from outages and build long-term reliability.
- Accelerating transportation transformation through greater efficiency improvements in freight and transit while increasing the deployment of zero-emission vehicles.
- Increasing upgrades of more efficient heating and cooling systems and deepening building decarbonization by electrifying those systems.
- Reducing waste-sector emissions through food waste diversion, and broader methane control.
- Preserving and expanding solar generation, while advancing offshore wind, long-duration storage, and other zero-carbon technologies.
- Enhancing natural and working lands with expanded restoration, reforestation, and climate-smart practices.
- Advancing industrial solutions by focusing on efficiency and decarbonization measures that align with profitability, while expanding workforce training and technical capacity to support deployment of new technologies.

# *Next Steps to CCAP Submission*

| Start Date | End Date | Task |
|---|---|---|
| 8-Sep-25 | 6-Oct-25 | CCAP draft out for Public Review |
| 7-Oct-25 | 24-Oct-25 | CPRG Team work to address and incorporate public feedback |
| 27-Oct-25 | 21-Nov-25 | FINAL CCAP is routed to DEQ Leadership, GO, Secretary, etc. for review and signatures |
| | **26-Nov-25** | **SUBMIT FINAL CCAP TO EPA** |

# *How to Submit your Comments…*

## The Draft Comprehensive Climate Action Plan is now available and open for public input

DEQ is accepting public input now until October 6, 2025, on the Draft North Carolina Comprehensive Climate Action Plan (CCAP). Input can be submitted using this form or emailed to cprg@deq.nc.gov with "CPRG Input" in the subject line. Input must be received by October 6, 2025.

**Draft North Carolina Comprehensive Climate Action Plan (CCAP)**

**Comprehensive Climate Action Plan (CCAP) Public Input**

https://www.deq.nc.gov/energy-climate/state-energy-office/inflation-reduction-act/climate-pollution-reduction-grant/comprehensive-climate-action-plan

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