North Carolina Energy Efficiency Roadmap:
List of Energy Efficiency Recommendations for North Carolina

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RECOMMENDATION 1: Increase Energy Efficiency Education and Career Awareness in K–12 and Community Colleges. Launch the Energy Efficiency Everywhere (E3) project, to curate and disseminate EE curricula to K–12 public school systems and county-based community colleges; launch a professional development training program for educators in North Carolina; create a statewide EE certification certificate; and establish an online sharing platform for energy efficiency related activities and lessons for teachers to use in their classroom.

RECOMMENDATION 2: Deploy Public Education Energy Managers in K–12 and Community Colleges. Build on the existing Utility Savings Initiative structure to create a statewide energy manager program, providing technical support and training to K–12 school districts and community colleges lacking in-house energy management.

RECOMMENDATION 3: Create Online Energy Efficiency Toolkits for All Sectors. Curate and produce a series of EE "toolkits." Each would contain sector-specific EE education and outreach material, scripts, presentations, and activities. These toolkits would reside on one portal website with links to other materials as appropriate.

RECOMMENDATION 4: Create Energy Efficiency Apprenticeship Programs. In partnership with ApprenticeshipNC, create an EE apprenticeship program to include apprenticeships and pre-apprenticeships for NC workers with industry partners and organizations, and "career awareness" programs in K–12 settings.

RECOMMENDATION 5: Perform a Public Education Workforce Data and Economic Impact Study. Perform a workforce economic impact study that captures critical data needed to invest public and private resources in K–12 and higher education curriculum development and career awareness related to North Carolina's EE industry.

RECOMMENDATION 6: Raise Energy Efficiency Awareness on North Carolina Building Code Council. Improve the North Carolina Building Code. Council (NCBCC)'s support of energy efficiency by adding an Energy seat to the Council's makeup, increasing the EE education of all existing members and establishing new actionable goals that prioritize EE in North Carolina's current and future building codes.

RECOMMENDATION 7: Establish a Pathway to Net-Zero Energy-Ready New Buildings. Establish a defined pathway to net-zero energy ready new buildings by 2042; ensure all new buildings receive an inspection, verification, or rating that ensures functional energy code compliance; improve enforcement of building codes at existing buildings; and revisit the building codes on a more frequent basis (with possible automatic review and adoption of model language).

RECOMMENDATION 8: Improve North Carolina legislative Process for Building and Energy Codes. Through statutory language, provide the NCBCC with a formal review and recommendation opportunity when the legislature proposes building and energy code changes.

RECOMMENDATION 9: Establish an Energy Efficiency Advisory Council. Establish an Energy Efficiency Advisory Council (EEAC) comprised of representatives from utilities, state agencies, higher education, industry, advocates, and other EE experts. The EEAC would share information and best practices between stakeholders, to increase EE measures for residential and commercial programs across the state and oversee implementation of the EE recommendations included in the state's Clean Energy Plan.

RECOMMENDATION 10: Create Project Management Coordination System for Delivery of Energy Efficiency, Urgent Repair, and Weatherization Programs. North Carolina energy efficiency, urgent repair, and weatherization programs are administered separately by multiple agencies, creating significant inefficiencies, and falling short of their goals. Coordinate communication between the participating agencies and build an effective and efficient energy services delivery mechanism to relieve or eliminate energy burden and improve housing conditions.

RECOMMENDATION 11: Create a Standardized Measurement and Evaluation Process for Evaluating Energy Efficiency, Urgent Repair, and Weatherization Programs. Create a unified, standardized waiver for applicant/homeowners that allows energy consumption data to be shared with all relevant state agencies. The waiver would enable agencies to market programs in more targeted fashion, measure the efficacy of certain interventions, identify need for follow-up or continued support, and in the aggregate, understand which programs are most effective at reducing energy burden for beneficiaries.

RECOMMENDATION 12: Create an Energy Efficiency "Technical Assistance" Entity. Establish an EE Technical Assistance Administrator, a distinct entity responsible for assisting NC municipal utilities, electric cooperatives and state agencies with developing EE customer programs, negotiating contracts and using EE to comply with NC's Renewable Energy and Energy Efficiency Portfolio Standard (REPS).

RECOMMENDATION 13: Match Energy Efficiency Opportunities to Unique Sector Needs. Develop EE rebates, incentives, and other program offerings to better address underserved and energy-burdened sectors with a priority focus on low-income, multifamily, and mobile homes as well as the agricultural sector. Other target sectors might include houses of worship, military populations, rural customers, small businesses, and some industrial customers.

RECOMMENDATION 14: Evaluate the Inclusion of New Criteria to EE Program Approval Process at North Carolina Utility Commission. Evaluate the inclusion of new review criteria to address equity, accessibility, and inclusiveness (among all applicable social, economic, demographic or geographic groups), in new EE program reviews by the NC Public Utilities Commission and the EE program filing and approval process.

RECOMMENDATION 15: Utilize Utility Demand-Side Management Savings for Low-Income Energy Efficiency Programs. Utilize savings from demand response and load-control utility programs to fund EE improvements to reduce peak demand and overall energy consumption at low-income single and multifamily residences that are identified through meter data as having disproportionately high contribution to peak.

RECOMMENDATION 16: Develop a Heat Pump Water Heater Rental Program as a DSM/EE Program. Deploy "smart" equipped Heat Pump Water Heaters (HPWH) as an EE and DSM tool targeted to low- to moderate-income communities (LMI) through a utility-sponsored equipment rental program. By shifting loads off peak through thermal storage, additional utility cost savings and/or funding for LMI programs could be realized.

RECOMMENDATION 17: Increase Funding to the North Carolina Housing Trust Fund. The NC HTF has a long history of creating high-quality multi- and single-family affordable housing opportunities for low-income communities. Provide additional investment to meet the challenges of EE in low-income communities while also creating jobs and new economic opportunities.

RECOMMENDATION 18: Create a North Carolina–Based Clean Energy Fund. Create a NC-based Clean Energy Fund to issue loans, provide credit enhancements, and invest in clean energy and EE projects, to the benefit of North Carolina businesses, congregations, nonprofits, and consumers. Following examples in Colorado and Nevada, an independent nonprofit organization could administer the program.

RECOMMENDATION 19: Support Expanded Access to Creative Utility Financing Programs. Improve the effectiveness and accessibility of creative EE financing programs—including on-bill tariffs or the use of third-party providers—across multiple sectors. Encourage utilities with clarifying authority, performance data, and loss protection.

RECOMMENDATION 20: Allow Flexible North Carolina Agency Funding for Energy Efficiency Projects. Allow NC agencies flexibility in how to fund EE projects including the ability to carry an EE reserve fund; allow for annual Office of State Budget and Management (OSBM) increases that reflect known utility rate increase and utilize utility savings realized by NC agencies to remain available to the agency for additional EE projects.

RECOMMENDATION 21: Standardize Energy Efficiency Metrics and Reporting Practices in State Buildings. Standardize what and how energy information is reported, including factors beyond energy consumption and measures implemented, to determine life-cycle cost and the contribution of projects towards the EO80 goal of 40 percent reduction in energy use in state-owned buildings.

RECOMMENDATION 22: Establish a Fuel-Neutral Statewide Energy Efficiency Fund to Address Energy Burden and Equity Concerns. Implement a fuel source-neutral rider for all carbon-based energy to incentivize energy savings in previously unreachable populations. A statewide nonutility/energy provider collects the rider for all carbon-based fuels, assessed per a standardized metric (e.g., MMBtu, tons CO2e). Energy burden would be based on total carbon-fueled energy consumption, not a specific fuel or energy provider, resulting in a more equitable system than the current rider.

RECOMMENDATION 23: Include Valuation of Non-Energy Benefits in Energy Efficiency Investments. Develop methodology to calculate benefits to public health (via air and water quality), economic development, environmental health (GHG emission reduction, air and water quality), and increased property value and reduced tenant turnover for EE investments at the utility scale and at the building level. This methodology should be developed prior to the cost-effectiveness testing analysis (Recommendation 24, below).

RECOMMENDATION 24: Commence a NCUC Study on Cost-Effectiveness Testing. The NC Utilities Commission should select a consultant to analyze opportunities to improve EE program participation using current or new cost-effectiveness testing regulations and protocols, including the National Standard Practice Manual (NSPM).

RECOMMENDATION 25: Institute a Mandatory Energy Efficiency Resource Standard. Separate from North Carolina's current Renewable Energy Portfolio Standard (REPS) framework, develop a mandatory Energy Efficiency Resource Standard (EERS) for all utilities that will support the most cost-effective way to achieve efficiency goals outlined in EO80.

RECOMMENDATION 26: Establish Minimum Energy Efficiency Goals within Current REPS Program. As an alternative to recommendation 25, incorporate a 25 percent minimum, up to 40 percent maximum, EE contribution to the REPS goal beginning in 2021, subject to cost-effectiveness screens. Apply this to IOUs only.

RECOMMENDATION 27: Provide "Download My Data" Functionality for All Utility Data. Enable all customer classes to download 24 months of utility data using a standardized XML format (Green Button "Download My Data" or similar standard). Provide data access through existing metering infrastructure rather than require significant investments in new meters just for the purpose of accessing incremental water and natural gas usage.

RECOMMENDATION 28: Establish Database of Rates for All North Carolina Utilities. Require all electric, water, and natural gas utilities in the state to publish all of their rate schedules (and updates) in a standardized machine-readable XML format, accessible to all ratepayers.

RECOMMENDATION 29: Continue to Evaluate Automatic Energy Data Transfer. Continue to work with all utilities on ways they can provide automatic transfers of data to third parties when customers have authorized access to their data.

RECOMMENDATION 30: Collect Existing Data on Energy Efficiency Metrics. Identify the basic information needed to tell an "energy efficiency" story for North Carolina and search existing public and private reporting mechanisms to find that information. Collect information on all types of energy into one place for one-stop shop analysis.

RECOMMENDATION 31: Establish an Online Data Repository for Energy Efficiency Metrics. Establish a transparent and straightforward repository of energy use, energy savings, and types of EE measures implemented. Gather the information collected in Recommendations 21 and 30, and present in an online repository that enables users to download aggregated energy use and savings data.

RECOMMENDATION 32: Expand the Energy Savings Data Repository to Include Voluntary Reporting. After launching the energy savings data repository (Recommendation 31) and demonstrating its utility in tracking energy use, energy intensity, and energy savings progress in the state of North Carolina, expand the repository by encouraging new entities to begin reporting their energy use, energy savings, and types of EE interventions.