



NORTH CAROLINA HOME BUILDERS ASSOCIATION

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Proposed 2024 North Carolina Code Adoption Consumer Impact

The North Carolina Home Builders Association (NCHBA) represents more than 14,000 companies while supporting hundreds of thousands of jobs contributing billions in annual economic activity. While the residential construction industry makes up our membership, the consumers have our full attention.

The NCHBA is motivated by the wants and needs of past, current and future home buyers. Homeownership is the best way in today's world to establish long term financial stability for the average American. By building equity and contributing to the tax base, homeownership fuels the local economies and serves as a foundation of our society. Every new regulation enacted by policymakers results in a financial consequence for the consumer.

It has been stated that homeowners in the state of North Carolina would experience energy savings of 16.2%¹ by updating to the latest energy code. The average energy used in homes across North Carolina is shown to be \$2,400 per year (\$128 per month for electrical² and \$72 per month for gas³). Thus, the potential yearly saving could be approximately \$384, or around \$32 per month.

The NCHBA asked builders to provide cost data for achieving the proposed 2024 NC Energy Code (based on the 2021 ICC Energy Code – IECC) requirements on homes statewide. The cost breakdown is attached.

Key data point to consider:

The average new home price in 2022 in NC was \$369,500⁴.

The median household income in 2021 in NC was \$60,516⁵.

The income needed to quality in 2022 in NC was \$85,781⁴.

With these code changes, there would be an additional weighed statewide average increase of \$20,400 per newly built home (\$17,800 in climate zone 3A, \$31,700 in climate zone 4A, and \$28,800 in climate zone 5A). With energy cost savings of \$389 per year, the simple average payback would be over 52 years.

If the consumer had to finance these costs in a 30-year mortgage at 6% interest rate (as of this report), the additional annual mortgage expense would be \$1,464 per year, costing them \$1,080 MORE than the potential energy savings. As proposed, the 2024 NC Energy Code (based on the 2021 IECC) is not appropriate at this time.

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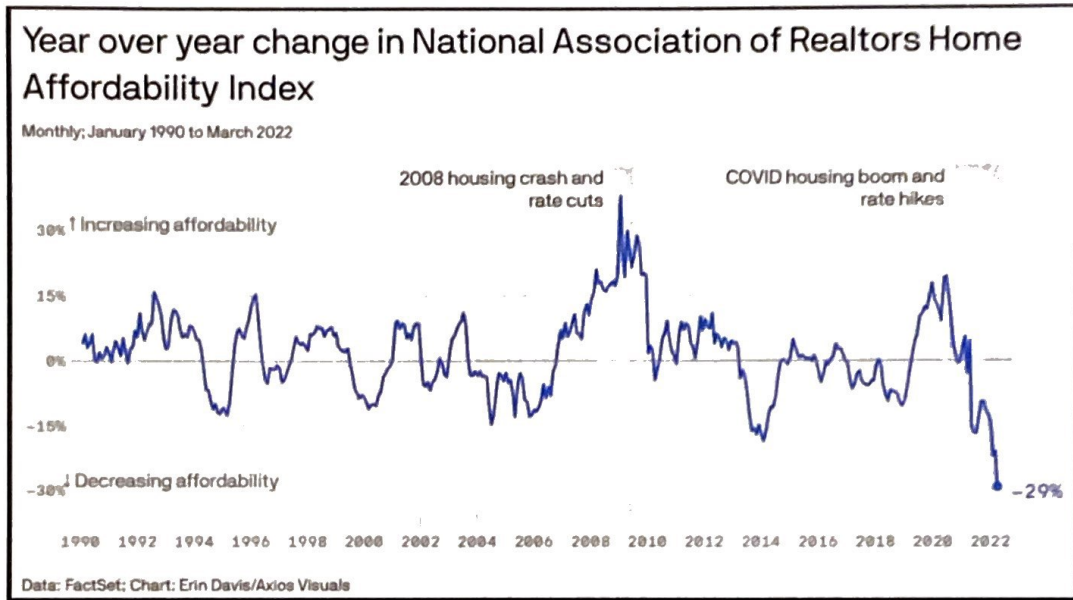
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The 2022 US estimates indicate that for every \$1,000 increase for the median new home price of (\$412,505), 117,932⁴ households would be priced out nationally. This proposed code would price over 102,500 households out.

Builders along with consumers have the voluntary option to use the current 2018 NC Energy Code Appendix R4 High-Efficiency Residential Option (HERO). Duke Energy⁶, and possibly other power providers offer discounts and rebates to build beyond the Code minimum requirements. Mandating the proposed 2024 NC Energy Code would eliminate the HERO option, resulting in price increases for all consumers and substantially decrease new home affordability.



Currently, newly built homes are exponentially more efficient than older homes, without the proposed 2024 NC Energy Code. The NCHBA and its members want to put as many people as possible into new homes, which will have the greatest impact on energy efficiency.

¹ Waite, M. 2022. *States Primed to Benefit from Upcoming Federal Funding to Advance Building Energy Codes*. Washington, DC: American Council for an Energy-Efficient Economy. <https://www.aceee.org/policy-brief/2023/01/states-primed-benefit-upcoming-federal-funding-advance-building-energy-codes>

² 2021 *Average Monthly Bill- Residential*. Washington, DC: U.S. Energy Information Administration www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf

³ Cimarusti, Sarah., *Utility Bills 101: Utility Tips, Average Costs, Fees, and More*. <https://www.move.org/utility-bills-101>

⁴ Na Zhao, Ph.D., *NAHB Priced-Out Estimates for 2022*. National Association of Home Builders. <https://www.nahb.org/-/media/05E9E223D0514B56B56F798CAA9EBB34.ashx>

⁵ 2021 *Quickfacts North Carolina*. United States Census Bureau. <https://www.census.gov/quickfacts/NC>

⁶ *Residential New Construction Program*. Duke Energy. <http://www.duke-energyrncinfo.com/about>

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Cost Increase from the Proposed 2024 NC Energy Code versus the current 2018 NC Energy Code

Item (Model house is a Slab on Grade - no basement or crawlspace)	Code Reference	Weighted Average
		Across all CZs
		Reference House: 2,434 sq.ft. 2-story
Construction Documents: Now gives the Code Official the option to waive the requirements, In the 2018 Code, 103.1 Exception 2 deleted this requirement	N1101.5 (R103.1)	\$ 250
Certificate: Additional required information specified and in addition to the 2018 Code	N1101.14 (R401.3)	\$ 80
Vapor Retarder: Added requirement (Kraft paper or Poly to the inside wall) that was not in the 2018 Code	N1102.1.1 (R401.1.1)	\$ 75
Fenestration U-Factor and Glazed Fenestration SHGC: 2018 Code - U-Factor: 0.35 to 0.30 (all CZ) and SHGC: 0.30 (CZ 3,4) to 0.25 (CZ 3), to 0.40 (CZ 4,5)	N1102.1.3 (Table R402.1.3)	\$ 309
Ceiling Insulation: 2018 Code - R-38 or R-30ci (all CZ) to R-49 (CZ 3), to R-60 (CZ 4,5)	N1102.1.3 (Table R402.1.3)	\$ 1,800
Wall Insulation: 2018 Code - R15 or R13+2.5ci (CZ 3,4), R19 or R13+5ci to R20 or 13+5ci or 0+15ci (CZ 3), R20+5ci or R13+10ci or 0+15ci (CZ 4,5)	N1102.1.3 (Table R402.1.3)	\$ 1,526
Wall Framing: 2018 Code - R15 or R13+2.5ci (CZ 3,4), R19 or R13+5ci to R20 or 13+5ci or 0+15ci (CZ 3), R20+5ci or R13+10ci or 0+15ci and wood stripping, fasteners, etc. (CZ 4,5)	N1102.1.3 (Table R402.1.3)	\$ 3,965
Basement/Crawl Space Wall: 2018 Code - 5ci or R-13 (CZ 3), 10ci or R-15 (CZ 4, 5) to 5ci or R-13 (CZ 3), 10ci or R-13 (CZ 4), 15ci or 19 or 13+5ci (CZ 5) - not included	N1102.1.3 (Table R402.1.3)	
Slab Edge: 2018 Code - R-0 (CZ 3), R-10ci (CZ 4,5) to R-10ci for 2 ft (CZ 3), R-10ci for 4 ft (CZ 4,5)	N1102.1.3 (Table R402.1.3)	\$ 1,440
Soffit/Top Plate Baffles at Attic: Additional baffles needed for the added insulation requirements	N1102.2.3 (R402.2.3)	\$ 120
Crawl Space Door: 2018 Code - R-5ci (CZ 3,4,5), to 5ci (CZ 3), 10ci (CZ 4), 15ci (CZ 5) - not included	N1102.2.4 (R402.2.4)	
Attic Access Hatch Baffles: Additional baffles needed to contain the increased insulation requirements	N1102.2.4 (R402.2.4)	\$ 30
Electrical & Communication Outlet Boxes: Air seal where on the exterior wall	N1104.1.1 (Table R402.4.1.1)	\$ 300
Air Leakage - Blower Door Test: Required in the new Code to test dwelling (no longer visual)	N1102.4.1.2 (R402.4.1.2)	\$ 650
Programmable Thermostat: Requirement in the new Code for non-primary heating systems other than forced air furnace or heat pump	N1103.1.1 (R403.1.1)	\$ 50
Supply and Return Ducts in Attic: 2018 Code - R-8 (all zones), R-13 for supply / R-8 for return (CZ 3), R-8 for supply / return (CZ 4, 5) - see notes	N1103.3.3 (R403.3.3)	\$ 240
Hot Water Systems: Circulation pump with temperature maintenance required	N1103.5 (R403.5)	\$ 400
Updates ventilation fan efficacy	N1103.6.2 (Table R403.6.2)	\$ 989
Ventilation Testing: Required in the new Code to test efficacy	N1103.6.3 (R403.6.3)	\$ 250
Lighting: 100% high-efficacy lighting (excluding kitchen appliance lighting fixtures) verses 2018 Code of 75%	N1104.1 (R404.1)	\$ 100
Lighting: Adds requirement for lighting controls to fixtures (excludes bathrooms, hallways, safety, security and exterior lighting fixtures)	N1104.2 (R404.2)	\$ 150
Lighting: Adds controls on exterior lighting when total power to system is greater than 30 watts	N1104.3 (R404.3)	\$ 75
Additional Efficiency Package: More efficient HVAC equipment performance option, Gas House (>95 AFUE natural gas furnace and 16 SEER AC)	N1108.2 (R408.2)	\$ 3,200
Square Footage Reduction: Loss of 2" of usable square footage along exterior walls due to increased insulation requirements @ \$200/sf - Loss of SF Value - not included	-	
Increased Cost: Time to wait on testing, reporting, inspections and approvals due to additional regulations (assume 4 weeks @ \$200k construction loan @ 6%)	-	\$ 1,000
Cost to Builder Estimated increase from the current 2018 NC Energy Code to the proposed 2024 NC Energy Code =		\$ 16,999
Cost to Consumer Estimated increase from the current 2018 NC Energy Code to the proposed 2024 NC Energy Code =		\$ 20,400
Total number of Counties in each Climate Zone =		100

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