



Looking to plug 'leaky' homes, NC wants to put a major dent in home energy costs

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February 23, 2023

They aren't changes a homebuyer might notice at first blush, or the amenities or drop-dead location that leave the hosts and guests on home-improvement television shows gushing.

But things like thicker windows, more insulation and a tighter "building envelope" could have as much of an impact on a homeowners' monthly bottom line – and generally don't cost a pretty penny to have installed when a structure is built. And they are changes that, when multiplied by the thousands considering how many new homes North Carolina adds each year, can have a real impact on lowering the state's greenhouse gas emissions that contribute to a warming planet.

"This really is a huge deal," said said [Kim Wooten](#), an electrical engineer from Durham and member of the N.C. Building Code Council. She also was chair of the ad-hoc committee that spent the past 18 months examining ways to improve the state's energy efficiency codes. "It will allow us to save a ton of money on the home-buying and rental side, generate good-paying jobs across the state, and increase our attractiveness to industrial and high-tech companies because they like coming to states that are up on their codes and promoting these kind of initiatives."

Focus on clean energy

The changes involve incorporating new energy efficiency standards into North Carolina's building code. The tweaks, which would include structural nips and tucks to improve a building's tightness, or envelope, aim to lower a property owners' operating costs and reduce greenhouse gas emissions. The logic is if less power is needed to heat or cool a building, that means lower power bills for owners or renters and less emissions from fossil fuel-powered plants generating the power.

According to the [N.C. Department of Environmental Quality](#), residential uses represent the second largest consumer of energy in the state after transportation. Revising the state's building code to increase energy efficiency was one of the recommendations in the state's [Clean Energy](#)

Plan, which was published in the wake of Gov. Roy Cooper's 2018 executive order that sought to reduce North Carolina's greenhouse gas emissions to 40% below 2005 levels by 2025.



Since taking office Cooper has replaced nearly all of the 17 members of the code council, a largely under-the-radar board that in the past was seen as chummy with the state's powerful development community.

So is a candidate's view on clean energy now a prerequisite to get on the building council?

"Governor Cooper considers a wide variety of qualifications, including a candidate's approach to clean energy and energy efficiency, when making appointments to the building code council," said Jordan Monaghan, the governor's deputy communications director. "As the market-driven transition to clean energy and energy efficiency occurs across the country, the governor will continue to take action to make sure North Carolina is a leader in these efforts."

Helping homeowners

The proposed revisions would bring North Carolina's code largely in line with the latest international guidelines, and replace some language that first adopted in 2009, Wooten said.

She added that the new revisions also would open up the state to millions of dollars in grants and other aid from the federal government – including in the recent bipartisan Inflation Reduction Act (IRA) – for weatherization, training and other programs, funding that's largely limited to states that regularly update their codes to keep them current. North Carolina has been a laggard in that regard, in part due to a 2013 bill that limits updates to the state building codes to every six years.



North Carolina is booming, adding thousands of new housing units a year. But that's still not enough to keep up with demand as the state's population is projected to jump from an estimated 10.5 million this year to more than 11 million by 2030. It was 8 million in 2000. According to a December 2022 Cato Institute report called "Keeping North Carolina's Housing Affordable," home prices in the Tar Heel State have increased 31.5% since 2010.

"State officials estimate that North Carolina needs 900,000 additional homes over the next decade to meet the demands of a growing population," the report states. "Trends suggest that the state won't come close."

With growth and development pressures increasing, Dr. Rita Joyner, a senior advisor with the N.C. Sustainable Energy Association and a member of the building council and energy conservation ad-hoc committee, said updating the energy efficiency code to modern standards just makes sense on many levels. That includes helping relieve pressures on the state's power grid, which struggled recently when frigid temperatures around Christmas knocked out some of Duke Energy's power plants and left thousands in the dark.

"The U.S. Department of Energy analysis provided by Pacific Northwest National Laboratory (PNNL) highlights an average of \$345 annual energy cost savings for new homes built in North Carolina that implement the 2021 (International Energy Conservation Code) model code. Advancing the conservation code is a big win for building owners and homeowners as it helps to put money back in their pockets, while making these facilities healthier and more comfortable," she said via email. "Furthermore, it's imperative that we update the codes or the state risks losing millions of dollars in federal funding from the IRA."

Officials note that while a lot of the focus has been on what the changes would mean for residential properties, new commercial buildings also would reap the rewards from increased energy efficiency.

'Low-hanging fruit' improvements

Rob Zapple is a New Hanover County commissioner, member of the building code council, and served on the energy efficiency subcommittee. He also is a general contractor by trade.

Zapple said that during the review process he was very much aware of the cost-benefit equation of the proposed changes. He said that he had heard the whispers that the council was looking at making radical changes that would increase the costs of homes, damage the real estate market, and add to the costs and headaches for builders.

But he said the revisions are basically the "low-hanging fruit" that are a proverbial win-win for property owners and builders.



"In my opinion, and I'm just one member of council, that's an emphatic yes," Zapple said of whether both sides would benefit from the proposed code revisions. "These changes put us on a path toward energy efficiency here in North Carolina that we all should be proud of that."

Echoing the sentiment, Wooten said increased energy efficiency is a great marketing tool for developers and something consumers want today. She also credited the N.C. Home Builders Association for being an engaged party in the code-revision discussions.

"They gave us good input and practical input as we worked on developing these codes," she said. "They were very much a team player and partner on this."

A representative with the home builders couldn't be reached for comment Wednesday.

The building council, which meets quarterly, will have a public comment period on the proposed code revisions on March 14. Then the council will consider adopting the changes in June.

If the revisions – assuming they are approved by the building council – aren't tripped up by financial concerns or the N.C. General Assembly doesn't step in, they would then be scheduled to take effect January 2025.