

Residential Energy Code – Session 8

Marketing High Performance and Course Review

Instructor – Matt Belcher March 16, 2021: 6:30-8:30 pm CT





Housekeeping

Attendees are muted upon entry

Questions? Enter them in the chat box

Webinar is being recorded – slides and recording will be sent to attendees

CEU's will be available upon request (ICC)
 Information at end of presentation

Email <u>nwestfall@mwalliance.org</u> with questions

Today's Agenda

Energy Cost Savings - Incremental Costs and Payback Energy Code Benefits Non-energy code benefits Appraisals and Resale Value Value of Energy Codes Marketing High Performance Homes Q&A and Review Final Exam

ENERGY COST SAVINGS



- The energy code is the only building code that pays for itself!
 - Lower energy and operating costs
- Electricity generation reduced with advanced codes
 - Improved health / reduced community health costs
 - Reduced GHG emissions
 - Less grid stress
- Resiliency benefits
 - Homes constructed to newer codes allow longer period of safely sheltering in place

DOE conducts several analyses that deal with energy cost savings and cost effectiveness of the energy code

- State level costeffectiveness
- Cost determination
- Both include economic impacts in the analysis





DOE determination establishes the improvement of energy efficiency relative to the previous edition of the model code

Based on national average



Source: pnnl.gov

DOE conducts technical analysis evaluating the impacts of the updated code (relative to the previous edition). DOE estimates national savings for:

Energy cost savings
 Source energy savings
 Site energy savings



Site vs Source Energy

image: archtoolbox.com

DOE also develops reports evaluating the impacts of the updated code for costeffectiveness in each state, including:

Life cycle savings
 First year cost savings
 Simple payback

LIFE CYCLE COSTING



Image: slideshare.net

Example of DOE state cost-effectiveness report

The average statewide economic impact (per dwelling unit) of upgrading to the 2018 IECC is shown in the table below based on typical cost-effectiveness metrics.¹

Metric	Compared to the 2009 IECC
Life-cycle cost savings of the 2018 IECC	\$14,284.10
Simple payback period of the 2018 IECC	1.8 years
Net annual consumer cash flow in year 1 of the 2018 IECC ²	\$821.87
Annual (first year) energy cost savings of the 2018 IECC (\$) ³	\$938.68
Annual (first year) energy cost savings of the 2018 IECC (%) ⁴	15.0%

How much does \$1,500 of energy improvements add to your monthly payment on a \$250,000 mortgage?

- \$80

- \$50

- \$30

- \$10



Image: trulia.com

None of the above!!

At current interest rates (3.4%) a \$1,500 increase on a 30-year mortgage would up the payment....

A whopping \$6 per month!!



source: shutterstock.com

VALUE OF ENERGY CODES



Nebraska Energy Use by Sector

- Buildings account for nearly 50% of Nebraska energy use*
- Big opportunity to reduce consumption through building energy efficiency
 - Updated energy codes
 - Improved compliance

*

Advanced technologies



Resilience

- Energy codes reduce demand on the grid and improve grid reliability
- Help buildings remain at livable temperatures for longer periods
- Residents can shelter in place longer during periods of crisis (natural disasters, power outages)
- Homes can better withstand extreme temperatures (i.e. Polar Vortex)





Consumer Protection

- Building energy efficiency can substantially reduce energy costs for homeowners and renters
- Energy cost savings are particularly important for low-income families that historically have high energy burdens
- Homes built today will likely be around for 50-100 years – most cost-effective to implement energy efficiency measures during initial construction.





Indoor Environmental Quality

- Building envelope improvements required by the energy code improve indoor environmental quality and comfort
- Properly installed insulation and a tight building envelope allow for homes to remain at a comfortable temperature, even during extreme weather
- Mechanical ventilation and air sealing requirements provide homes with appropriate levels of fresh air from a controlled source (not from a dank crawlspace or attic)

Indoor Environmental Quality -Health Implications

- Efficiency updates to buildings can have a large impact on occupant health
- Improvements such as air sealing and better insulation have been found to reduce asthma-related hospital visits
- Appropriate ventilation reduces indoor air pollutants and mold growth
 - Lowers rates of sinus infections, allergies, and colds
 - Increases productivity and cognitive function for workers



Jobs

- Energy efficiency sector supports nearly than 14,000 jobs in Nebraska
- 67% of these jobs are in the construction industry

As codes advance and new technologies become commonplace, jobs are likely to grow in this field

new





Source: https://www.cleanjobsmidwest.com/state/nebraska

Stronger Local Economy

- Energy codes reduce the energy use of buildings, saving residents money on their utility bills
- Puts dollars back into residents' pockets that they can spend in the local economy





Sustainability Goals

- Improving building efficiency is essential for states and municipalities in order to achieve climate and sustainability goals
- Reduced energy consumption of buildings leads to reduced power generation and lower carbon emissions
- Improved grid reliability
- Effectiveness of renewable energy sources





Increased Value of Homes

- Homes constructed and labeled to be energy efficient have a higher market value and sell faster than less-efficient homes
- Adds value to homes and communities
- Increases tax base for municipalities
- Owners of an energy efficient home are less likely to default on mortgage payments, giving homeowners financial flexibility to spend in community





APPRAISALS AND RESALE VALUE

Green Appraisers

- Unlike granite countertops, energy efficiency investments are not always visible at a glance
- Utilize certifications, labels, ratings, and scores
- Make sure appraisers are accurately valuing sustainable properties
 - Residential Green and Energy Efficient Addendum - Assists
 appraisers in analyzing residential "Green" features and properties.



VALUE FOR GREEN HOMES





- Green Building certificate
- Performance test results
- Local Green Disclosure Form
- 12 month utility usage

Image: Eco Achievers

Efficient Homes Have Higher Resale Value

- Green certified homes have a <u>higher market</u> value than less efficient homes
- Research by the North Carolina Energy Efficiency Alliance shows that, on average, ENERGY STAR homes sell 89 days faster than traditional homes.
- The odds of mortgage default are also onethird less for ENERGY STAR rated homes

Lender Specification

"This Home is being built/renovated/updated to standards above prevailing code. It is designed and constructed with unique features and materials and with high efficient equipment and in accordance with high efficiency standards. The Lender shall choose an Appraiser educated and knowledgeable in this type of valuation of these specialized Homes. It is understood that unless said Appraiser can provide verification of education and knowledge, they will not be permitted to conduct the appraisal for this project."

Residential Green and Energy Efficient Addendum!

- Resources for realtors and appraisers on properly valuing energy efficiency/green features
 - Educational materials
 - List of designated appraisers
 - Trainings

For more information: <u>http://www.appraisalinstitu</u> <u>te.org/education/green_en</u> <u>ergy_addendum.aspx</u>



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MARKETING HIGH PERFORMANCE HOMES

High Performance Homes

- High-performing homes cost less to heat and cool, are more comfortable, and are healthier for their occupants.
- 69% of real estate agents said promoting energy efficiency in listings was very or somewhat valuable
- Immediate benefits energy savings, comfort, and health
- Long term-benefits higher selling price

Homeowners invest in highperformance upgrades. Homeowners enjoy the immediate benefits of a high-performing home.

Homeowners enjoy the long-term benefit: a home with a higher selling price.

SOLD

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Source: Elevatenp.org

Energy Efficiency is a Must-Have for Home Buyers

- A survey done by the NAHB in 2018 showed 46% of builders reported that marketing green homes was easier than marketing non-green homes
- Energy efficient homes also keep residents in their homes longer and sell more quickly and for a higher value than nonenergy efficient homes.



Top 2 Priorities: Increased comfort and saving money

- Use technology and data to your advantage
 - Show concrete and measurable data using thermal imaging, temperature readings and manometers used in blower door testing
- Assurance = Less liability = High referral rate
- More control over the building
- As an industry, we need to continue to leverage technology to offer better ways to lower utility expenses, increase home comfort and help keep the environment clean.



Monthly Payment

Bottom Line = Bottom Line

 "Right Sized" better design

 Comfort
 Competitively Priced
 Energy Savings + Reduced Maintenance

Cash Savings= Equity



Key Takeaways

- Energy codes are cost effective, and offer significant energy and cost savings to building owners and occupants over the lifetime of the building
- Strong energy codes have economic, resilience, and health benefits
- Building energy efficiency can be an effective marketing tool for builders – the key is to understand and know how to communicate the benefits

Questions?

Submit a question in the chat or unmute yourself to ask a question



Review:

- History of Energy Codes
- Building Science
- Energy Code Requirements
- Mechanical Systems
- Best Practices
- Non-Code Standards
- Advanced Building Efficiency Technologies
- The Value of Energy Codes and Marketing

Continuing Education Credits

Participants of this session are eligible for continuing education credits from the International Code Council

Course ID: 27514
CEUs: 0.2

If you would like a certificate of completion for this session, email Nicole at <u>nwestfall@mwalliance.org</u>



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THANK YOU!!





