

2013 Idaho Homeowners Energy Code Survey

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Background

This survey builds on a market assessment conducted in 2012. The 2012 surveys were conducted online from May through August of 2012 to research market barriers to code compliance. This initial market assessment included building officials, city and county leaders, architects and homeowners (builders declined to participate). The market assessment was the basis for developing a marketing plan that serves as an outreach plan for how to overcome barriers to code acceptance and provide tools that lead to more widespread awareness and understanding of the value of energy codes. The 2012 survey of homeowners was limited geographically, but warranted further investigation because the results revealed that homeowners were willing to pay more money for energy efficiency than commonly assumed, and cost had been identified as the most significant barrier in implementing more stringent energy codes.

In 2013, the Bonneville Power Administration awarded funding to conduct a more comprehensive survey of homeowners across the State of Idaho.

(The 2013 Idaho Homeowner Energy Code Survey is a scientifically random and valid representation of Idaho homeowners. It was run in accordance with ISO 20252:2012 Market Research Standards by Northwest Research Group LLC in collaboration with Boise State University, Office of Energy Resources and Eco Edge. The results are deemed worthy of publishing in academia and will serve to guide an update to the outreach plan developed during the previous grant.)

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1. Executive Summary

The study assessed Idaho homeowner views on energy codes. Survey questions were developed to meet the following objectives: 1) Determine if Idahoans value energy efficiency; 2) Establish a priority of value; 3) Determine if Idaho homeowners value statewide standards for energy efficiency; and, 4) Determine how much Idaho homeowners are willing to pay for energy efficiency.

To establish a priority of value, survey questions ranked the level of agreement on a 7-point scale, with 7 indicating strongly agree and 1 strongly disagree. A telephone sample was conducted with a random sample of 600 Idahoans, ages 18 and older, using a dual-frame (landline and cell phone) random digit dial (RDD) sample in which 30% of all interviews were completed with wireless only or wireless mostly households. The state was stratified by county into three geographic areas and sampling was proportionate to the population. A pretest of $n=30$ respondents was conducted. Final data collection was completed between December 12 and 22, 2013. All work was performed in accordance with ISO 20252:2012 Market Research Standards. The sample plan was designed to achieve a maximum margin of error of +/- 4.9 percent with 95 percent confidence.

Idahoans value energy efficiency with 65% being in favor of energy codes and nearly four out of five Idahoans feel their home is at least somewhat energy efficient. During a pretest of the survey questions, it was discovered that there was a lack of understanding of what makes a home energy efficient. Although most homeowners feel their home is at least somewhat energy efficient, they could not identify what about their home made it efficient. Respondents' inability to answer these initial questions resulted in those questions being removed from the survey. This tells us that there is a need for more education on *what* makes a home energy efficient. Based on this survey, the preferred way to reach homeowners is via direct mail or online, and the most believable information sources are local people such as an architect, building inspector or utility.

Overall, survey results indicate that there is support for energy codes. In particular, two out of three Idahoans are in favor of energy codes. Reasons for supporting energy codes are primarily financial. The majority feels that having energy codes will have an impact on monthly operating costs of their home, and they strongly agree that energy efficient homes have a higher resale value. Monthly operating costs are the top driver of whether someone supports energy codes. Another key driver is the belief that energy code standards ensure quality construction. An interesting finding is that none of the statements regarding value and/or purchase price of home have much of an impact on overall agreement with adopting statewide energy codes. In other words, there is very strong agreement that an energy efficient home has a higher resale value, but when regression analysis was performed, there was not a strong correlation between this statement and overall agreement with adopting a state energy code consistent with national standards. Similarly, we observed strong agreement that energy codes help make homes comfortable, but not a strong correlation.

Respondents also strongly agree that homeowners purchasing a new home should have a right to a home that meets national energy standards. Belief in this right is another key driver that determines whether they agree with energy codes. Those who disagree with the need for statewide energy codes do so because they feel that it limits homeowners' rights and, to a lesser extent, adds more government regulations. Although Idahoans generally agree that Idaho energy codes should be consistent with national standards, less than half say that they trust the State to adopt the right energy efficiency standards for Idaho.

Idahoans appear to be willing to pay as much as \$10 per month in additional rent or mortgage costs to save \$16 per month on energy bills, and indicate that an acceptable payback period is up to 7 years. This compares favorably to research on the cost of building to the current energy code (2009 IECC) versus the upcoming energy code (2012 IECC) because the estimated cost is less than \$10 per month and savings are \$21.75 per month.

2. Methodology

The grant recipient team worked collaboratively to develop the desired objectives, methodology and corresponding survey questions to ask. A telephone sample was conducted by Northwest Research Group with a random sample of 600 Idahoans, ages 18 and older, using a dual-frame (landline and cell phone) random digit dial (RDD) sample in which 30% of all interviews were completed with wireless only or wireless mostly households.

The state was stratified by county of residents into three geographic areas and sampling was proportionate to the population of each area.

1. North, North Central, East Central Idaho: 205 completed interviews (34%)
2. Southwest Idaho: 265 completed interviews (44%)
3. South Central and Southeast Idaho: 130 completed interviews (22%)

The North, North Central and East Central strata includes the following counties: Benewah, Bonner, Bonneville, Boundary, Butte, Clark, Clearwater, Custer, Fremont, Idaho, Jefferson, Kootenai, Latah, Lemhi, Lewis, Madison, Nez Perce, Shoshone, and Teton. The Southwest strata includes Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley and Washington counties. The South Central and Southeast strata includes Bannock, Bear Lake, Bingham, Blaine, Camas, Caribou, Cassia, Franklin, Gooding, Jerome, Lincoln, Minidoka, Oneida, Power and Twin Falls counties.

A pretest of $n=30$ respondents was conducted to evaluate questionnaire responses, test incidence, length, and programming. The pretest revealed that homeowners did not have a good understanding of what made their homes energy efficiency so questions related to this were removed.

Final data collection was completed between December 12 and December 22, 2013. The telephone survey averaged just under 13 minutes and covered the following topics: housing characteristics, attitudes toward energy codes, willingness to pay, education / sources of information, attitudes toward energy consumption and demographics. Demographic data captured was age, gender and income as well as housing characteristics including ownership, type and age of home.

All work was performed in accordance with ISO 20252:2012 Market Research Standards. The sample plan was designed to achieve a maximum margin of error of ± 4.9 percent with 95 percent confidence. This means that if the survey were conducted 100 times, the data would be within 4.9 percentage points above or below the percentage reported in 95 of the 100 surveys. To ensure that results accurately represent the population of Idaho, data was weighted to match age within gender within each stratum based on 2012 ACS 5 year estimate. See the appendix for detailed comparisons of weighted and un-weighted results.

3. Survey Results

Survey questions were designed to assess audience perceptions and characteristics in relation to specific topics, including housing characteristics, attitudes toward energy codes, key drivers, willingness to pay, education / sources of information and attitudes toward energy consumption. Most answers were based on a 7-point scale, with 7 indicating strongly agree and 1 strongly disagree.

3.1 Housing Characteristics

The majority of respondents own their own home while the remaining are renters. And, most respondents live in a home that is more than ten years old. Several questions were asked to gauge homeowner perception of their own home's energy efficiency. Nearly four out of five Idahoans feel their home is at least somewhat energy efficient. Two thirds of respondents report that their monthly energy bills are between \$50 and \$149 during the summer. Reported energy bills are higher during the winter, with most reporting monthly payments between \$100 and \$199. According the U.S. Energy Information Administration, the average total energy expenditures per year per household in Western states was \$1,650 or \$137.50 per month.¹

The majority of Idahoans report that energy costs are a relatively small (33%) to moderate (43%) portion of their household budget. Those living in newer homes are more likely to say that energy costs are a relatively small portion of their household budget—most likely reflecting that these are more energy efficient homes. Renters are more likely to suggest that energy costs are a large portion of their household budget—most likely reflecting lower household incomes.

During the pretest (not the actual survey) it was found that there was a lack of understanding of what makes a home energy efficient. Although most homeowners feel their home is at least somewhat energy efficient, they could not identify what about their home made it efficient. The inability to answer resulted in those questions being removed from the survey. This tells us that there is a need for more education on *what* makes a home energy efficient.

3.2 Attitudes toward Energy Codes

Idahoans strongly agree that they should have the right without any limitations to do what they want with their home and the amount of energy they use, but they also see benefits to having energy codes. Sixty-five percent of respondents are in favor of energy codes, and those living in Southwest Idaho demonstrate the strongest support for a statewide energy code. Reasons for supporting energy codes are primarily financial. The majority feels that having energy codes will have an impact on monthly operating costs of their home, and they strongly agree that energy efficient homes have a higher resale value.

They also agree that homeowners purchasing a new home should have a right to a home that meets national energy standards. In fact, nearly two out of three (64%) Idahoans agree that the State should adopt a state energy code consistent with national standards. While overall agreement is fairly even across all parts of the state, those in Southwest Idaho are significantly more likely to strongly agree.

¹ 2009 Residential Energy Consumption Survey: Final Energy Consumption and Expenditures Tables.

3.3 Key Drivers

Those supporting statewide energy codes are most likely to do so because of lower monthly costs and a belief that they have a right to a new home purchase that meets energy standards. The belief that energy codes will save money on utility bills and operating costs of the home has the biggest impact on whether or not a resident agrees that the State should adopt energy codes. So, based on analyzing key drivers, the State can garner stronger support for energy codes by focusing on the monthly cost savings that people will experience if their homes meet energy efficiency standards. Another key driver is the belief that energy code standards ensure quality construction. An interesting finding is that none of the statements regarding value and/or purchase price of home have much of an impact on overall agreement with adopting state wide energy codes.

Those disagreeing with the need for statewide energy codes do so because of personal beliefs, which are difficult to overcome. They feel that it limits homeowner's rights and, to a lesser extent, adds to more government regulations.

To identify key drivers for agreement or disagreement with the need for statewide energy codes, a number of statements were presented to those surveyed. The statements that garnered the most agreement are:

- Homeowners purchasing a new home should have a right to a home that meets national energy standards
- Energy codes will impact the monthly operating costs of my home
- Energy codes protect homeowners and renters from high utility bills
- Energy code standards help to ensure quality home construction
- Energy codes are just another way for government to regulate my life
- Homeowners should have a right without any limitations to do what they want with their home and the amount of energy they consume
- If my home is energy efficient, it will have a higher resale value

Having a Right to a Home that Meets Energy Standards

This driver has the highest agreement of all key drivers in support of adopting energy codes; however, there are differences across the state. Nearly a quarter of South Central / Southeast Boise residents neither agree nor disagree with this statement, which is possibly a reflection on differing beliefs as to what they consider to be homeownership rights.

Energy Codes Will Impact Monthly Operating Costs

While "lower monthly operating costs" is the top driver in support of adopting energy codes, agreement with this statement varies across the state. At 79 percent, agreement is highest in Southwest Idaho. Agreement is lowest in Northern Idaho (54%).

Energy Codes Provide Protection from High Utility Bills

Overall agreement that energy codes provide protection from high utility bills is pretty consistent across the state; however, the strength of that agreement varies. With less than thirty percent strongly agreeing, Northern and South Central/Southeast Idaho show less support for this idea. It should be noted that more than one quarter of respondents **disagree** with this statement.

Energy Codes Ensure Quality Construction

While agreement with other drivers varies across the state, there is fairly uniform agreement that energy codes ensure quality construction.

Energy Codes are Another Way for Government to Regulate My Life

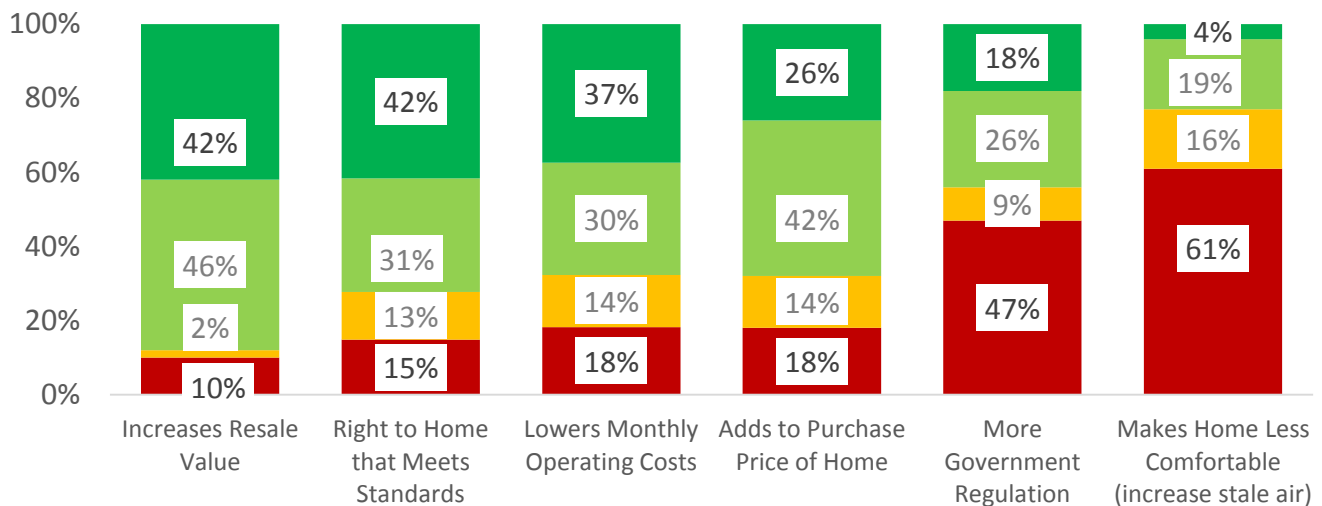
Nearly half (44%) of the respondents feel that energy codes are just another form of government regulation, and there are slightly higher levels of agreement with this statement in Southeast and Northern Idaho.

Homeowners Should Have Energy Rights without Limitations

Nearly two out of three respondents agree with this statement. However, agreement with this varies significantly across the regions with the strongest agreement in Northern Idaho, and the strongest disagreement in South Central / Southeast Idaho.

Agreement with Energy Codes Add Resale Value

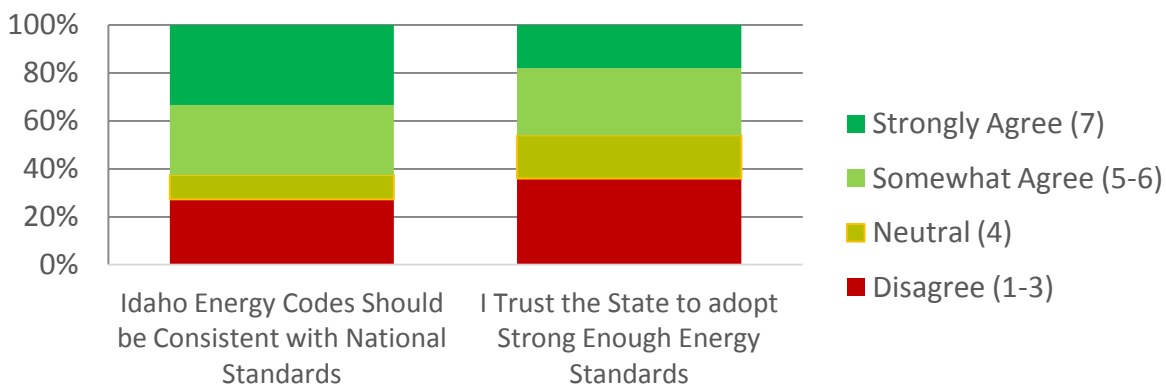
Idahoans strongly agree that energy efficient homes have a higher resale value; however, there is not a strong correlation between this statement and overall support for energy codes.



Base: Random selection respondents (weighted n=277-323 / unweighted n=300)
Northwest Research Group, February 2014

3.4 Idaho Energy Standards

Idahoans generally agree that Idaho energy codes should be consistent with national standards. However, less than half say that they trust the State to adopt the right energy efficiency standards for Idaho. When asked if they feel “My home should meet the same standards as neighboring states”, residents showed more agreement with national standards than neighboring states.



Base: All respondents (n=600)
Northwest Research Group, February 2014

3.5 Willingness to Pay

While a precise number cannot be given, Idahoans appear to be willing to pay as much as \$10 per month in additional rent or mortgage costs to save \$16 per month on energy bills. In other words, they are more sensitive to increases in the cost of their rent or mortgage than they are to potential energy savings. Those living in Southwest Idaho are willing to pay more per month in rent or mortgage costs to save money on energy while those living in Northern Idaho are willing to pay less.

While it is not possible to give a precise estimate for payback time, Idahoans appear to be willing to accept a payback period of about seven years to build a more energy-efficient home. Note that owners are willing to accept a longer payback period than renters. And, while Southwest and South Central / Southeastern Idaho are both willing to accept a 7 – 8 year mortgage payback time, Northern Idaho has a shorter acceptable payback period of just under 5 years.

3.6 Education / Sources of Information

Just under half of respondents are interested in learning how their homes compare to others. Most would prefer to get this information via direct mail or online even though responses also show that believability is quite low for information found on the internet or from sales people. Respondents reported that the most trustworthy information sources would be local people such as an architect, building inspector or their utility. And, those surveyed feel that the federal government is more believable than a State official.

3.7 Attitudes toward Energy Consumption

While more than three quarters of respondents (77%) agree that they can make a real impact if everyone conserves energy, nearly half (45%) do not believe that a lot of energy is wasted in Idaho. And, the majority of Idahoans say that they would prefer to pay a little more to maintain a warm home.

While Idahoans feel that the individual should be responsible for his or her energy efficiency, they do recognize that energy costs will continue to increase. In fact, sixty-five percent disagree that Idaho energy will always be cheap.

4. Recommendations

4.1 Policy

The status of energy codes in Idaho is based on a recommendation by the Idaho Building Code Board to the State Legislature to adopt the 2012 IECC commercial provisions but to adopt a significantly amended version of the 2012 IECC residential provisions. The amendments were submitted by the Idaho Energy Code Collaborative, which is an open forum for stakeholders to vet new energy codes and reach a consensus recommendation. The issue is that the recommendation disregards the overwhelming support in this 2013 homeowner survey as well as the 2012 market assessment for ensuring Idaho codes are consistent with national standards and the research that shows homeowners are willing to pay for more energy efficient homes. Cost was identified as the most significant barrier in the 2012 research, and both studies indicate that homeowners are willing to pay for the estimated cost to build to the 2012 IECC vs. the 2009 IECC. Furthermore, the research tells us that approximately two-thirds of Idahoans support energy codes and value energy codes that are consistent with national standards. Current policy is not aligned with what Idaho homeowners want.

Sharing these results directly with decision makers and collaborative members is a recommended next step. It is important for all stakeholders to be aware of the level of support Idahoans have for energy codes and the strong correlation between survey respondents feeling strongly that they have a right to state energy codes that are consistent with national standards. These stakeholders include elected officials, builders/contractors, design professionals, code officials and real estate professionals. Also of note and concern is that less than half of survey respondents trust the State of Idaho to adopt the right energy efficiency standards, and they have a higher level of trust hearing from local professionals, utilities and the federal government than a state official. This is a perception issue for the State of Idaho to address.

4.2 Outreach

Developing marketing materials with a targeted message for specific audiences are important for effective outreach. Target audiences include elected officials, builders/contractors, design professionals, code officials, consumers/homeowners and real estate professionals. Specifically, targeting decision makers, builders and homeowners would have significant impact. Decision makers and builders clearly have some misperceptions about what homeowners think, so sharing survey results is important. And, outreach to homeowners should start with education about what makes a home energy efficient. Understanding why homeowners value energy codes helps to shape the messaging used in outreach. Survey results show that the most agreement was with energy efficient homes having a higher resale value and the most correlation to supporting energy codes was because of lower monthly operating costs and having a right to a home that meets energy standards. Reinforcing what they agree with is likely to increase acceptance of the information while clearly communicating the statements that *correlate* with supporting energy codes (i.e., the top drivers) would be more effective to influence opinions on energy code adoption.

While “lower monthly operating costs” is the top driver in support of adopting energy codes, agreement with this statement varies across the state. At 79 percent, agreement is highest in Southwest Idaho. Agreement is lowest in Northern Idaho (54%). Specific attempts should be made to message the cost savings of energy efficiency in the Northern Idaho market. And, because more than one quarter of respondents disagree with the statement about protection from high utility bills, work should also be done to appropriately message the protection energy codes provide.

Nearly half (44%) of the respondents feel that energy codes are just another form of government regulation. Due to slightly higher levels of agreement in Southeast and Northern Idaho, there is an opportunity for strong

messaging in these areas, particularly with regards to the range and influence energy code regulations will have on homeowners.

Similarly, those disagreeing with the need for statewide energy codes do so because of personal beliefs, which are difficult to overcome. They feel that it limits homeowner's rights and, to a lesser extent, adds to more government regulations. To overcome this, convey that energy codes will not place many limits on what homeowners can do to their homes (perhaps specifically call out new homes and specific remodels).

Furthermore, messaging should focus on consistency with national standards and on increasing confidence in the State's ability to adopt the right energy codes. Nearly two-thirds of Idahoans agree that Idaho energy codes should be consistent with national standards. However, less than half say that they trust the State to adopt the right energy efficiency standards.

Support for energy codes can be built by messaging the projected increase in energy costs combined with the potential cost savings of meeting national energy codes. Research has shown that building a new 2,400 square foot home in Idaho to the current energy code (2009 IECC) adds \$873 in construction costs compared to the previous energy code (2006 IECC).² This would increase the cost of a typical mortgage by about \$48 per year or \$4 per month, which is less than the \$10 per month that respondents are willing to pay. According to a study by the U.S. Department of Energy and Pacific Northwest National Laboratory³, the cost to build a new 2,400 square foot home in Idaho to the 2012 IECC compared to the 2009 IECC is \$1,438 in climate zone 5 and \$2,568 climate zone 6. If the cost is averaged between 2,400 square foot single family homes and 1,200 square foot multifamily homes (proportional to the actual breakdown of new construction in Idaho) in climate zone 5, the added construction cost is \$1,171. The corresponding reduction in energy costs is \$21.75 per month, which is more than the \$16 per month referenced in the survey. And, the simple payback is 5.7 years, which is within the tolerance of most respondents.

The recommended top three messages to utilize across Idaho include:

- Energy codes lower monthly operating costs and protect homeowners from high utility bills.
- Energy codes ensure quality construction.
- Homeowners purchasing a new home have a right to a home that meets national energy standards.

The most trustworthy messenger according to survey results are local people such as an architect, building inspector or their utility.

The medium for conveying information is direct mail and online.

In conclusion, these survey results indicate an inherent support for adopting an Idaho energy code that is consistent with national standards, which can be translated to adopting the latest IECC every three years; effective January 1, 2015, a significantly amended version of the 2012 IECC will be enforced in those jurisdictions that have adopted the code in Idaho a year later than the established three-year cycle. Most measures were amended to the 2009 IECC standards, which is not staying consistent with national standards. Implementing an outreach plan that speaks to homeowners' values and recognizes the reasons for their support will help to overcome barriers to code acceptance and lead to more widespread awareness and understanding of the value of energy codes. It is suggested to focus marketing materials on the top three messages, provide education on what makes a home energy efficient, utilize local power utility direct mailings for conveying messages and direct homeowners to online resources such as www.idahoenergycode.com.

² *True Cost of the 2009 International Energy Code for New Homes in Idaho*, www.bcap-ocean.org (See Appendices)

³ *Idaho Energy and Cost Savings for New Single- and Multifamily Homes: 2012 IECC as Compared to the 2009 IECC* by DOE / PNNL

Appendices