



Alabama Energy Code Field Study: Energy Savings Opportunities



OVERVIEW

The Institute for Market Transformation conducted a study of 260 new single-family homes under construction in Alabama to determine the level of compliance with the building energy code using an accepted methodology.

The study was conducted in three phases: Phase I collected baseline data beginning in March 2014; Phase II included 15 months of targeted training based on the findings from Phase I; and Phase III collected data after the training, concluding in March 2018. During this time, Alabama's residential construction code transitioned from the 2009 International Energy Conservation Code (IECC) to the 2015 IECC with state-specific amendments.

Significant savings opportunities for improving compliance in **five high-impact areas** were identified in both phases. Each year, this has the potential to cut household energy costs by **\$978,585**. The full report can be found [here](#).

AT A GLANCE

Goal

Assess energy efficiency and energy savings potential

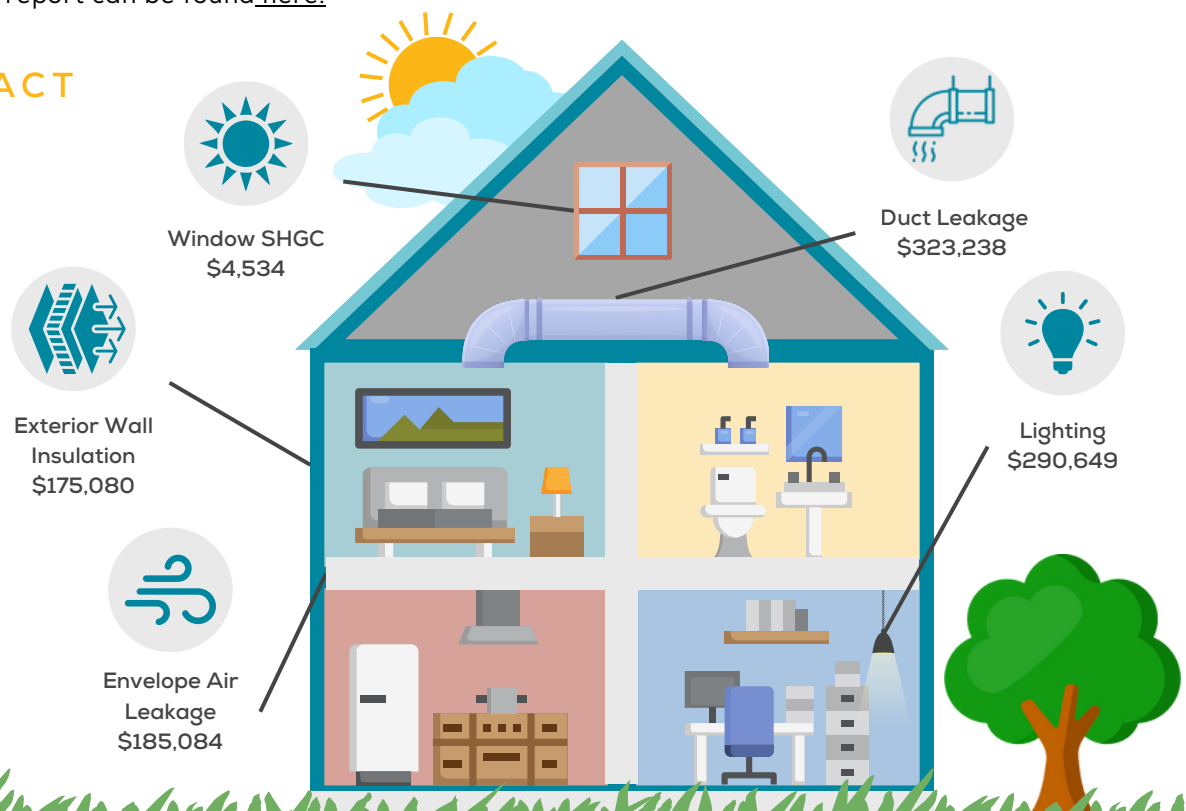
Annual Savings Potential

\$978,585

Largest Savings Impact

Duct Leakage

HIGH-IMPACT AREAS



CEILING INSULATION

- Most R-value observations met the code requirement exactly; compliance was 95% in Phase I and 96% in Phase III.
- Grade I installation quality was observed in 73% of Phase I observations; this increased to 94% in Phase III, reflecting a significant improvement.
- Therefore, U-Factor compliance also improved from 75% in Phase I to 88% in Phase III.

DUCT LEAKAGE

- Despite the duct and envelope air leakage training conducted in Phase II, measured duct leakage remained poor; compliance declined from 15% in Phase I to 8% in Phase III.

ENVELOPE AIR LEAKAGE

- In Phase I, reductions in envelope air leakage values were identified as a key area for improvement; this became a focus of Phase II education and training.
- Average envelope air leakage rate improved slightly from 5.16 ACH50 in Phase I to 5.08 ACH50 in Phase III; the requirement was 5 ACH50.
- Compliance increased modestly from 46% to 51%. Envelope air leakage rate remains an opportunity for continued improvement.

WINDOWS

- Compliance with SHGC standards improved from 74% in Phase I to 87% in Phase III.
- Window U-Factor compliance increased from 94% in Phase I to 100% in Phase III.

WALL INSULATION

- In both Phase I and Phase III, nearly 100% of observations met or exceeded the R-value requirement; the majority met the R-13 requirement exactly.
- Despite Phase II education and training efforts, there was no measurable improvement in installation quality; the U-Factor compliance rate remained at 16%, indicating a persistent issue.

FOUNDATION & FOUNDATION INSULATION

- Alabama did not have foundation insulation requirements for slab-on-grade under the 2009 IECC or 2015 Alabama codes; insulation data for other foundation types is not included in this report.

LIGHTING

- Despite education and training in Phase II, compliance with high-efficacy lighting requirements remained low; it improved from 21% in Phase I to 37% in Phase III.
- Lighting remains a significant opportunity for energy savings across the state.

