

# Case Studies on SEO and Utility Involvement in Building Energy Code Programs

## IOWA CASE STUDY: Above Code Program Implemented by Three Utilities

In 2011, a working group of the Iowa Energy Efficiency Collaborative, including representatives from the SEO and the Iowa Building Code Commission, designed an Advanced Builder Option Package (Advanced BOP). This program was created to fill a gap in the existing utility residential rebate programs, which were not adequately supporting the state building energy code. Each of Iowa's IOUs offer the Advanced BOP, which provides rebates for new homes built beyond the existing 2009 IECC code to many of the higher 2012 IECC code requirements. The Advanced BOP is intended to have the same impact as a stretch code and will allow utilities to support adoption of and compliance with the state building energy code. Through providing incentives to builders to meet the next iteration of the state code and verifying that these requirements are met the utility program educates builders on the future code and prepares them to comply with it. Additionally, this program has the advantage of allowing utilities to claim energy savings as they do with other residential incentive programs. Members of the working group that developed the Advanced BOP have identified aspects of the program that can improve in future years, including: 1) utilities should no longer offer alternative, less stringent incentive programs, which have the potential to reduce participation in the Advanced BOP and 2) utilities should agree upon a standard rebate structure and code requirements for the Advanced BOP.

Iowa Building Energy Code	
<b>Current Residential Code</b>	2009 IECC
<b>Current Commercial Code</b>	2009 IECC with reference to ASHRAE 90.1-2007
<b>State Code Authority</b>	Iowa Building Code Advisory Council reviews code on three-year IECC cycle

### Program Details

Iowa's gas and electric investor-owned utilities (IOUs), municipal utilities, and rural electric cooperatives are required by law to offer energy efficiency programs to their customers.<sup>1</sup> The Iowa Office of Consumer Advocate, along with an Energy Efficiency Collaborative, works closely with the Iowa Utility Board (IUB) to provide oversight of these programs. In early 2011, the Energy Efficiency Collaborative began discussing potential utility energy efficiency programs that would support energy code compliance. Given that the collaborative was large (over 30 people) and the leaders from the Office of Consumer Advocate did not have a technical background in codes or building science, 12 individuals with expertise in building energy codes and residential construction formed a working group to develop a program.<sup>2</sup>

Over eight meetings from March to June 2011, the working group designed an Advanced Builder Options Package (Advanced BOP), which provides rebates for new homes that are built to a set of 2012 IECC code requirements.<sup>3</sup> Intentionally designed to be above 2009 IECC, the state's current code, Advanced BOP aims to produce more energy savings than the existing Builder Options Package program (which barely meets the current 2009 IECC) and also to be less time consuming for contractors than ENERGY STAR for New Homes Version 3. Given that utilities need to meet rebate spending requirements and are uncertain how the Advanced BOP will perform in its first year, they are still offering the existing Builder Options Package and ENERGY STAR New Homes programs. However, the working group believes that Advanced BOP will attract participation from home builders who already construct energy-efficient homes because of market differentiation or customer demand reasons.

1 Iowa Code § 476.6, <https://www.legis.iowa.gov/DOCS/ACO/IC/LINC/Section.476.6.pdf>

2 The working group included representatives from the Iowa Energy Division within the Iowa Economic Development Authority (the State Energy Office), Home Builder Association of Iowa, home builders and subcontractors, HERS raters, the Office of Consumer Advocate, the Department of Safety's Building Code Bureau, state and city code officials, energy raters, building science professionals, and industry consultants.

3 Single-family homes or duplexes qualify for the program.

## Scope and Activities

In 2012, Iowa's three investor-owned utilities (IOUs) are offering Advanced BOP to their customers, with slightly different rebate structures and code requirements (see Table 1).

Towards the end of 2012, the Energy Efficiency Collaborative will hold a meeting with the three Iowa utilities to analyze Advanced BOP's results and compare participation in Advanced BOP with participation in the normal Builder Options Package and ENERGY STAR for New Homes Version 3. The working group hopes that there will be enough participation in Advanced BOP to discontinue the less-stringent BOP program and that the utilities will set identical code requirements and rebates across the Advanced BOP program for 2013, which are two weaknesses in the current program.<sup>4</sup>

**Table 1: Rebates Levels and Building Energy Code Requirements of Iowa Advanced BOP Utility Programs**

	Alliant Energy	MidAmerican	Black Hills
Rebate Levels			
Heating and Cooling Customers	\$2,800	\$1,750	NA
Cooling Only Customers	\$840	\$500	NA
Natural Gas Heating Only Customers	\$1,960	\$1,250	\$1,000 (plus additional \$300 rebate for HERS Rating)
Geothermal Customers	\$1,200 (plus additional prescriptive geothermal rebate)	\$1,300 (plus additional Residential Equipment rebate)	NA
Building Energy Code Requirements			
Link to Requirements	2012 New Home Construction Builder Guide	2012 EnergyAdvantage® New Homes Program	2012 Residential New Construction Program

## Energy Savings

One strength of the Advanced BOP program is that it engages utilities in code adoption and compliance while allowing them to claim savings in the same manner that they would for other residential incentive programs. In this case, utilities determine energy savings by comparing projected energy use of homes built to the Advanced BOP with projected energy use if they were built to the 2009 IECC.

## Program Cost

The utilities fund the Advanced BOP program as part of their energy efficiency plans. The amount of rebates will be contingent upon participation levels in the program. It is too early in the construction year to make predictions.

## Quality Assurance and Evaluation

All projects that participate in Advanced BOP must receive a HERS inspection from a certified HERS rater that scores 70 or less and confirms compliance with the 2009 IECC.<sup>5</sup> The utilities are also organizing a quality assurance (QA) initiative. For 10% to 20% of homes that participate in the Advanced BOP program, a utility QA contractor will observe HERS rater inspections. This approach is meant to both evaluate the work of the individual HERS rater and ensure that inspections are accurate. However, there is concern among some members of the working group that this QA approach is not adequate. Conducting field verifications after the HERS rater inspections could remove the bias of raters behaving differently when observed.<sup>6</sup>

<sup>4</sup> Brian Bishop and David Ruffcorn, Iowa Department of Safety, Building Code Bureau, Interview by author, 4 Apr. 2012.

<sup>5</sup> The Energy Efficiency Collaborative working group recommended a HERS score of 59 or less, as ENERGY STAR for New Homes Version 3 requires a 55 or less, but the utilities have set the score at 70.

<sup>6</sup> Erin Wiggins, Cenergy, Interview by author, 10 Apr. 2012.