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Boulder, Colorado's SmartRegs: Minimum Performance Standards for Residential Rental Housing

In 2011 the City of Boulder, Colorado enacted its "SmartRegs" ordinances that require all single family and multifamily rental properties to meet a minimum energy efficiency standard by January 2019. The SmartRegs initiative is designed to help the city achieve its ambitious carbon emissions reduction goals and to improve the quality, safety, and marketability of Boulder's rental housing stock.

The effort involved two years of extensive stakeholder engagement and a sophisticated strategy that included dividing the SmartRegs provisions among three different ordinances to improve the chances that at least some components would be approved. All three ordinances ultimately won community and city council support by including a long (8 year) compliance period, offering financial incentives and technical assistance to building owners, and providing owners with a streamlined prescriptive process for meeting compliance.

One year after the regulations went into effect, the city had handily exceeded its first-year goals of 1,000 units inspected and 500 units achieving compliance. The program is also experiencing an unexpected bonus: some property owners are voluntarily choosing to upgrade beyond the minimum requirements. Given its broad support and successful early rollout, SmartRegs shows promise for overcoming transaction costs and reducing barriers to energy efficiency gains in the residential rental sector.

The Case for Performance Standards

The City of Boulder's Climate Action Plan calls for greenhouse gas emissions reductions across all sectors of the community (e.g., buildings, transportation and industry). Energy conservation in new and existing buildings plays a key role in the plan's ambitious goals. In 2006, Boulder residents overwhelmingly approved a Climate Action Tax to fund Climate Action Plan efforts. For more than a decade the city has been incrementally strengthening minimum energy efficiency standards for residential new construction and remodels as well as for commercial construction and renovation.¹ Despite these efforts, Boulder has not been on track to meet its 2012 Climate Action Plan goals, and the city determined that it needed additional policy tools to encourage market innovation in improving existing residential building energy performance. Rental units make up more than 50 percent of Boulder's dwellings and thus offered a logical next opportunity for energy savings. The city designed its "SmartRegs" ordinances to deliver multiple public and private benefits including improved building quality and marketability; safer, healthier, and more comfortable housing; lower energy bills for occupants; and reduced greenhouse gas emissions. The city's existing rental licensing process requires rental unit owners to complete a health

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¹ Boulder's "Green Points and Green Building Program" consists of optional and mandatory green building performance standards for residential and commercial new construction and renovations. For more information, see: www.bouldergreenpoints.com.

and safety inspection as part of the license renewal process every four years. This system, and the database of licensed properties it has created, provided an ideal intervention point for implementing and enforcing the new regulations.

Getting to Yes

After more than two years of community stakeholder engagement, Boulder, Colorado became the first U.S. city to require all existing residential rental properties to meet a minimum energy efficiency standard by a set date.² The regulations, which require building owner compliance by January 2019, became effective January 2011. Getting SmartRegs passed required a sophisticated strategy. The SmartRegs working committee purposefully developed the full set of regulations as three separate ordinances so the City Council would have the option to approve some or all of the program components, increasing the chance that at least some elements would be approved.³ Ultimately, the City Council unanimously approved all three.

The SmartRegs development process involved extensive collaboration with community and technical working groups that solicited input from market-rate and affordable housing rental property owners, property management and rental associations, rental inspectors, student housing advocates, environmental organizations and other community interests. The effort also incorporated online surveys, social media channels and official public processes. Megan Cuzzolino, the city’s Residential Sustainability Specialist, stressed that involving stakeholders from the beginning, and making sure that their input was incorporated into planning, was critical to their ultimate success.

SmartRegs proposals were initially met with concern and resistance from many property owners. Key sticking points were the stringency of the regulations and time frame for compliance. Boulder’s rental owners range from middle income residents relying on a single rental unit for retirement income, to affordable housing owners

The SmartRegs Prescriptive Checklist

The prescriptive checklist provides property owners with a roadmap for understanding how to reach the 100 points necessary for SmartRegs compliance. This excerpt from the checklist shows that a smaller amount of duct leakage garners more points, as does the presence and percent coverage of duct insulation throughout a building.

DUCT LEAKAGE Base: _____ Final: _____	
CFM per 100 SF	POINTS
80 cfm @ 25 Pa	0
60 cfm @ 25 Pa	4
40 cfm @ 25 Pa	9
20 cfm @ 25 Pa	14
10 cfm @ 25 Pa or Less	17

DUCTS Base: _____ Final: _____				
LOCATION / INSULATION	25%	50%	75%	100%
Uninsulated	0	0	0	0
Insulated to at Least R-4 (unconditioned space)	1	3	4	6
No Ducts / Ducts Entirely Within Conditioned Space	2	3	5	7

²SmartRegs scope and compliance exemptions include: 1) manufactured homes; 2) affordable housing units that have applied for or received state or federally subsidized weatherization; 3) prescriptive point modifications for certain historic buildings; and 4) buildings achieving equivalent energy efficiency performance through innovative means, determined at the discretion of the code official. The code official also has discretion to approve additional time to achieve compliance if one rental license cycle is deemed not financially feasible. Properties in which some measures are technically impractical must purchase carbon offsets for the improvements not made.

³Ordinance 7724 replaced the existing housing code with the 2009 International Property Maintenance Code (IPMC) with local amendments added. Ordinance 7725 updated the rental licensing ordinance with new baseline and safety inspection checklists. Ordinance 7726 created the new energy efficiency requirements for existing rental housing units.

with hundreds of units with little free cash flow to make regular maintenance and basic capital improvements, to high-end luxury condo owners.

The final ordinances ultimately won community support by including an eight-year compliance period that will allow rental owners sufficient time to budget for energy improvements over several years, by offering financial incentives and technical assistance through the city's EnergySmart program⁴, and by including two paths for compliance – a streamlined prescriptive path and a custom, energy assessment-based path. In addition, the fact that the city had already addressed most of the other building sectors (e.g. residential and commercial new construction and renovations) with even more stringent requirements than SmartRegs helped allay some property owners' concerns that the rental community was being singled out.

Two Compliance Paths

Initially, the city proposed requiring building owners to meet a minimum Home Energy Rating System (HERS) Index score of 120.⁵ However stakeholder concerns about the costs and time commitment associated with this approach led working committee to add a streamlined prescriptive compliance path as well. The prescriptive approach involves a SmartRegs inspector awarding points for energy efficient features such that achieving the minimum compliance score of 100 points is roughly the equivalent of a HERS rating of 120 (see text box on page 2).^{6,7}

The Energy Smart Program: Encouraging Early Compliance

At the same time that SmartRegs went into effect, Boulder County launched the American Recovery and Reinvestment Act-funded EnergySmart program, which provides rebates, low-cost energy assessments, and technical assistance to encourage residential and commercial property owners to invest in energy efficiency. The City of Boulder complemented these County initiatives by launching the EnergySmart Service, a streamlined one-stop-shop for helping residential property owners through the Prescriptive Path SmartRegs compliance process by providing on-on-one assistance as well as financial incentives specifically for properties required to make upgrades (see Table 1 on page 4).⁸ Representatives from both the County and City programs stress that funds are limited and they use messaging that creates a sense of urgency in encouraging building owners to take action.

⁴ EnergySmart provides financial incentives and technical assistance for properties working to comply with SmartRegs.

⁵ HERS compares the energy efficiency performance of an assessed home with a standard reference house (assigned a HERS Index of 100) that meets the 2006 International Energy Conservation Code. Each point higher or lower along the index scale represents a one percentage change (more or less, respectively) in energy use from the reference point. A HERS score of 120 equates to 20 percent more energy usage than the reference standard.

⁶ The prescriptive checklist assigns points according to the efficiency of the building construction and systems including cooling and heating, lighting, appliances and such thermal attributes as foundation type, insulation and air leakage. Shared walls and interior ductwork garner points due to their thermal advantage. The system also adds points for building operator and tenant energy conservation training and for various types of solar equipment.

⁷ The rating or score must be achieved by each individual unit. Common areas and ground floor retail space in multifamily buildings are exempt from SmartRegs but are covered under the city's commercial building codes.

⁸ City of Boulder EnergySmart Service is funded by the city's Climate Action Plan tax.

Early Results

One year after launch, the program has surpassed Boulder’s first year goals of 1,000 units inspected and 500 units compliant. As of January 25, 2012 over 2,226 units had signed up for the EnergySmart Service, 1,327 had completed initial inspection, and 925 of the inspected units (over 69%) have been deemed SmartRegs compliant using the Prescriptive Pathway.⁹ Megan Cuzzolino noted that multifamily residences are faring better in meeting SmartRegs requirements because of features like a higher number of shared walls (which provide thermal efficiency and earn prescriptive points) per sq ft of floor space. The City expects that single family residences, many of which date from the 1970s, will make up a majority of required upgrades. Second-year goals are four times the 2011 goals. By the end of 2012 staff hopes to have inspected over a quarter of the city’s 19,000 rental units and to get nearly 16% of the City’s units into compliance.

Owners required to upgrade their properties to meet compliance spent an average of \$2,186 per unit before rebates and incentives. Upgrade investments for all projects completed through the SmartRegs program in the first year total over \$1.2 million, most of which have been self-funded by building owners.

Table 1: Summary of Boulder County and City of Boulder EnergySmart Incentives

Feature	Boulder County EnergySmart Program	City of Boulder EnergySmart Service
Eligibility	Open to all residential EnergySmart participants	Available only to properties requiring upgrades to comply with SmartRegs
Full Service ¹⁰	\$120 for full home assessment and energy advisor service	\$120 for full home assessment by a SmartRegs Energy Inspector and energy advisor service. ¹¹ Fee is waived for affordable housing properties.
Partial Service ¹²	\$30 for advisor service only, for those already working with a contractor. Service excludes home energy assessment.	
Rebates (in addition to utility, state and other rebates)	Up to \$250 per unit (\$1,000 maximum for owners of multiple units)	Up to \$750 per unit to pay for necessary upgrades (\$5,000 maximum for owners of multiple units)

Unexpected Benefits

The city is seeing some surprising outcomes. Owners of over 500 units (more than half located in two large apartment complexes) found to be already compliant upon inspection, voluntarily chose to upgrade

⁹ Of the 1,327 units that had completed initial inspection, 462 units (35%) were found compliant on inspection and another 394 units (29%) achieved compliance through direct install measures (e.g., CFLs, low-flow faucets) which are provided at no extra cost as part of the EnergySmart Service.

¹⁰ Full service package includes home energy assessment – including blower door and infrared testing, direct install measures, and one-on-one guidance from an EnergySmart energy advisor including help with rebate paperwork, contractor selection, and financing if needed.

¹¹ Only SmartRegs Energy Inspectors can credit building owners with points towards compliance for direct install measures.

¹² Partial service includes the same energy advisor service and direct install measures as the full service package, but not the home energy assessment.

beyond the minimum requirements. Though the compliant units are not eligible for the extra incentives offered by the City, the owners are using the County’s rebates for improvements to their buildings. Of the \$1.2 million invested in energy improvements, over \$830,000 (69%) was spent on properties that were not required to upgrade.

The Future – for Boulder and Beyond

Boulder’s broad community support for climate protection and the city’s existing rental property licensing requirements eased the process for implementing SmartRegs. Many cities have passed Climate Action Plans and may be able to use support for those plans to implement new energy efficiency standards. In addition, many cities have rental licensing or equivalent ordinances that they may be able to leverage.

Key considerations for creating buy-in included a long compliance period and modest standards (as compared to standards for efficient new home construction), which addressed broad concerns of property owners and other stakeholders while fulfilling the city’s aim of reaching properties most in need of upgrades. In addition, Megan Cuzzolino stresses that the EnergySmart assistance and incentive program has been vital in encouraging early action and compliance to date.

City officials are beginning to plan a small set of proposed changes to the ordinances that will address gaps discovered through the first year of experience in order to create a better platform for potentially tightening the standards in the future. In addition, the City may consider establishing standards for existing commercial buildings. Implementation would likely be quite different without a rental licensing process to tap. However, as with SmartRegs, the City intends to make it clear that the commercial property stakeholders would be well-involved throughout the entire standards development process.

SmartRegs Resources

Resource	URL/Contact
Program Websites	
SmartRegs Website	www.bouldercolorado.gov/smartregs
EnergySmart Program Website	http://www.energysmartyes.com/
EnergySmart SmartRegs Web Page	http://www.energysmartyes.com/home/smartregs
City of Boulder Rebates Matrix Page	http://www.bouldercolorado.gov/files/PDS/rentalhousing/Energy_Efficiency_Project/COB_rebates_8.2.11.pdf
Program Coordinators	
Yael Gichon, Sustainability Coordinator, City of Boulder	gichony@bouldercolorado.gov
Megan Cuzzolino, Residential Sustainability Specialist, City of Boulder	cuzzolinom@bouldercolorado.gov
Additional SmartRegs Information	
Property Maintenance Code – Ordinances 7724 (2010) and 7726 (2010)	http://www.colocode.com/boulder2/chapter10-2.htm

Rental License Code - Ordinance 5798 (1996) and 7725 (2010) – which provides for enforcement of the Property Maintenance Code	http://www.colocode.com/boulder2/chapter10-3.htm
Prescriptive Path Handbook	http://www.bouldercolorado.gov/files/PDS/rentalhousing/Energy_Efficiency_Project/handbook_final_12.13.2010.pdf
Project Background and History of Proceedings	http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=13005&Itemid=22#BACK
Case Study with Prescriptive Path Development Methodology	http://www.bouldercolorado.gov/files/PDS/rentalhousing/Energy_Efficiency_Project/SmartRegs_Final_Report_to_City_of_Boulder_March_26.pdf

This Policy Brief is an excerpt from the report: “Delivering Energy Efficiency to Middle Income Single Family Households.” For the full report and other resources visit: <http://middleincome.lbl.gov>