



The Real Estate Roundtable

**STATEMENT OF
JEFFREY D. DEBOER
ON BEHALF OF
THE REAL ESTATE ROUNDTABLE AND BUILDING STAR**

**UNITED STATES SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES**

**HEARING
*TO REVIEW LEGISLATIVE PROPOSALS DESIGNED TO
CREATE JOBS RELATED TO ENERGY EFFICIENCY***

**SENATE DIRKSEN OFFICE BUILDING
ROOM 366
WASHINGTON, DC
Thursday, March 11, 2010, 10:00 AM**



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INTRODUCTION

Thank you Chairman Bingaman, Ranking Member Murkowski, and Members of the Committee, for conducting today's hearing on legislative proposals designed to create jobs and enhance energy efficiency.

I am Jeffrey D. DeBoer, the President and Chief Executive Officer of The Real Estate Roundtable, an organization that represents the leadership of the nation's top 130 privately- owned and publicly-held real estate ownership, development, lending and management firms, as well as the elected leaders of the 16 major national real estate industry trade associations. When I speak of the commercial real estate sector I am referring to six principal property types – apartments, offices, retail, industrial, health care and hotels.

Collectively, Real Estate Roundtable members hold portfolios containing over 5 billion square feet of developed property valued at over \$1 trillion, over 1.5 million apartment units, and in excess of 1.3 million hotel rooms. Participating Roundtable trade associations represent more than 1.5 million people involved in virtually every aspect of the real estate business.

I am pleased to testify on behalf of Building STAR, a program designed to modernize existing commercial and multi-family structures through energy efficiency retrofits. These building upgrades will help *quickly* generate jobs, conserve energy, and save money, all to fuel our nation's economic recovery. Building STAR serves as a complement to the Home STAR proposal, which is also a topic of this hearing and provides incentives for energy efficient upgrades for the single-family residential market.

The Real Estate Roundtable is proud to be part of a broad-based coalition that supports Building STAR. We urge Congress to enact, authorize, and fund this program swiftly. As this statement will explain in greater detail, Building STAR will:

- **Create jobs.** As a public-private incentive proposal, a \$6 billion public investment in Building Star will yield \$18 – \$24 billion in total program spending. This will create between 150,000 – 200,000 jobs between 2010 and 2011, especially in the hard-hit construction industry.
- **Benefit small businesses.** More than 90 percent of the contractors who perform commercial and multi-family building retrofits employ fewer than 20 workers. Even where large firms hold the primary contract, much of the work is subcontracted to smaller firms.
- **Save energy and money.** Based on a study by the American Council for an Energy Efficient Economy (ACEEE), a coalition member, Building STAR would yield \$3.3 billion in energy savings annually between now and 2011.
- **Reduce carbon emissions.** ACEEE projects that the full suite of Building STAR's energy efficiency programs would result in greenhouse gas reductions equivalent to taking nearly 4 million cars off the road, and removing 33 300-Megawatt peaking power plants from service.
- **Help a capital-starved industry.** Credit markets remain tight, dampening activity in the commercial real estate sector. Moreover, as our country's building stock ages, the value of those assets will continue to fall and their ability to produce income will remain constrained. Building STAR will inject much needed capital to modernize commercial properties, so that our real estate market can regain its competitive edge and once again realize a fuller potential to generate income.

Building STAR grew out of the efforts of the *Rebuilding America* coalition. In 2009, *Rebuilding America* worked to develop a comprehensive national strategy to transform the energy efficiency market and mobilize a retrofit industry that could renovate 50 million commercial and residential buildings by 2020 – accounting for 40% of the nation's building stock. This was based on a goal established by the City of Chicago, which would cut the renovated buildings' energy consumption by 30 percent.

Rebuilding America's policy priorities were then adapted and expanded to include a near-term jobs package, which became the Building STAR program. Building STAR would provide the struggling commercial real estate sector with a lifeline that would take immediate effect. It would jump start manufacturing and get the building trades back to work by installing energy-saving equipment in commercial and multi-family buildings across the country. As I will explain in more detail below, through a quick survey of a sample of Roundtable members, we have learned ***that many building owners, managers, contractors, and other professionals can take advantage of the rebates offered in this program right away. This means a skilled labor force would be put to work immediately,*** to manufacture and install the equipment and materials for which Building STAR's rebates are offered, and conduct services to ensure that buildings perform to their optimal energy efficiency capacities. This program would also generate additional jobs for painting, drywall, and other laborers.

Building STAR was introduced as a stand-alone bill – S. 3079, the “Building STAR Energy Efficiency Rebate Act of 2010”– last Thursday, March 4, by Senators Merkley, Pryor, Brown of Ohio, Stabenow, Sanders, and Cardin. S. 3079 consists of a number of rebates and a financing title for commercial and multi-family retrofit projects. I want to thank Senator Merkley for his leadership in introducing this important legislation and all of the original co-sponsors for sharing that vision. I especially want to thank Senators Stabenow and Sanders of this Committee for being original co-sponsors, and appreciating the immense importance of this legislation for job creation – in their states and across the nation – as reflected by all of the co-sponsors’ geographic diversity.

Public funding of \$6 billion for Building STAR would leverage private capital and spur \$18 to \$24 billion in total program spending. This injection of stimulus will create 150,000 – 200,000 jobs, particularly in the hard-hit construction industry, as well as manufacturing and other sectors. The construction industry has suffered tremendously, resulting in high unemployment and leaving unused significant available manufacturing capacity. Today, an average of 1 in every 4 construction workers (25 percent) – over 1.9 million people – is unemployed. Many of these are skilled members of the building trades who have worked on commercial, institutional, and large residential buildings. The manufacturing sector has also been hit hard by the recession: building materials manufacturing is down by 40 percent, and 1.8 million manufacturing jobs have been lost since the downturn began. I will discuss how Building STAR can help redress these staggering unemployment numbers further below.

An impressive, diverse group of stakeholders has rallied around Building STAR. It is the product of a wide consultation among members of *Rebuilding America*, a coalition of more than 80 business, real estate, financial, labor, consumer, environmental, and advocacy organizations. Furthermore, S. 3079’s technical specifications are drawn from a spectrum of outside energy efficiency and construction experts, such as the Associated General Contractors (AGC) of America, the National Association of State Energy Officials (NASEO – also testifying here today), the Association of State Energy Research and Technology Transfer Institutions (ASERTTI), the American Council for an Energy-Efficient Economy (ACEEE), and the Alliance to Save Energy (ASE). Advocates for Building STAR also include labor and manufacturing representatives, such as the Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA), Sheet Metal Workers’ International Association (SMWIA), the Polyisocyanurate Insulation Manufacturers Association (PIMA), and the Council of North American Insulation Manufacturers Association. Companies like GridPoint, Intel, and Johnson Controls, the National Association of Energy Service Companies (NAESCO), the U.S. Green Building Council, the American Institute of Architects, also rank among Building STAR’s supporters. Representatives of end users such as the Consumer Federation of America and the National Restaurant Association endorse Building STAR as well. Appendix I to this statement lists the members of the impressive and diverse coalition that has formed to urge Congress to enact Building STAR into legislation.

COMMERCIAL REAL ESTATE AND THE RESIDENTIAL MARKET

Building STAR could play a significant role in the economic recovery of the commercial real estate sector. My industry’s vitality is critical to ensuring that our state, national and global economies function and thrive, especially considering the value, jobs and income produced by commercial real estate.

- **Value:** Commercial real estate represents \$6.7 trillion in value, constitutes as much as 13% of GDP, and supports \$3.5 trillion in debt.

- **Jobs:** About 9 million jobs can be attributed to a healthy real estate sector. A gamut of professionals depends on prospering commercial developments, such as construction workers, land use planners, investment brokers and lenders, realtors, building owners and managers, architects and interior designers, environmental and energy consultants, maintenance and security contractors, engineers, landscapers, plumbers, lawyers, and accountants.
- **Income:** The distinguishing characteristic of commercial (as opposed to residential) property is that it is designed to generate income. As the Congressional Oversight Panel observed last month:

“Commercial properties are generally income-producing assets, generating rental or other income and having a potential for capital appreciation. Unlike residential property, the value of a commercial property depends largely on the amount of income that can be expected from the property.”

Congressional Oversight Panel, February Oversight Report: “Commercial Real Estate Losses and the Risk to Financial Stability,” Feb. 10, 2010, at 7. Moreover, commercial real estate is financed in a manner to primarily reflect that the *sine qua non* of such properties is income generation. Accordingly, commercial property owners use the income created from their holdings (that is, rents, leases, retail sales, hotel stays, etc.) to pay debt service, whereas homeowners generally use their personal income to pay off their mortgages.

This brings us back to the first item bulleted above: value. The amount of income generated by a commercial property directly correlates to that asset’s value. Lower real estate values result when a commercial property produces insufficient income to service any outstanding mortgage. In turn, default and foreclosure risks run higher, skittish banks are less inclined to extend favorable (or any) refinancing for a “troubled asset,” and a commercial property with greater debt compared to its worth will find itself “under water.”

This is precisely why Building STAR comes at a crucial time for my industry. The rebate and financing programs provided by S. 3079 will play a major role in improving the *value*, or income-producing qualities, of commercial properties. Buildings are dynamic assets. To maintain their competitive edge, building owners and managers must continually find means of financing and capital to repair and replace obsolete equipment and systems. While the seizure of credit markets is becoming slightly more relaxed, lending will remain tight as long as the value of underlying collateral deteriorates.

Commercial properties need new means of reinvestment to attract office tenants, renters, shoppers, and travelers, who are more discerning than ever with their own spending. They demand state-of-the art buildings that use less energy. They want tangible benefits like savings on utility bills. And they seek intangible appeal in properties to accommodate their more socially conscious green aesthetic.

On these points, Building STAR delivers. S. 3079’s rebates will stimulate energy efficiency projects across all commercial building types. Upgrades will attract companies to lease retrofitted Class A offices, residents to purchase units in efficient multi-family high-rises, and business travelers to stay in renovated hospitality space. All of this activity will improve property values and lubricate financing, which can lead to new developments and more jobs down the road.

I do not mean to suggest that there is a silver bullet to erase all of commercial real estate's woes, or that Building STAR is the sole answer to our nation's economic crisis. But insofar as we are concerned with improving the underlying asset value of commercial properties, S. 3079 is significant legislation. Furthermore, as I explain below, Building STAR will operate as a major job creation measure – especially for the hard-hit construction industry – and will support thousands of small business contractors who will install and perform those retrofit components contemplated by the bill. Because these rebates can be utilized immediately following enactment of this legislation, people can be put back to work in short order. Finally, Building STAR will present substantial energy savings and environmental benefits by encouraging commercial building modernization.

Before I provide information on the jobs and environmental benefits of S. 3079, let me take this opportunity to explain the nuts-and-bolts of Building STAR – specifically, the types of rebates offered by the program, and a description of the application process to receive Building STAR rebates.

BUILDING STAR PROGRAM – WHAT IT IS AND HOW IT WORKS

Building STAR would authorize a rebate program for building owners and managers who install or implement nearly 20 different types of energy-efficient equipment, materials, and services during 2010 and 2011. The Building STAR rebates would cover approximately 20-30 percent of the cost of installing energy efficient products and/or services (such as building performance audits) during 2010 and 2011. Rebates are capped at 50 percent of the total cost of the product or service for a given building. Moreover, they are largely based on proven, existing rebate programs offered by some states and utilities.

The Building STAR rebate program would cover the following products and services:

- Building envelope insulation;
- Mechanical insulation;
- Windows and window films;
- Low-slope roofing insulation;
- HVAC equipment, chillers, water heaters, and boilers;
- Duct testing and sealing;
- Variable speed drives for motors;
- Interior and exterior lighting;
- Building energy audits, retro-commissioning plans, tune-ups for heating and cooling, and building operator management training and certification; and
- Energy management and monitoring systems.

It is critical to understand that Building STAR's retrofit components are *code-stretching measures*. They are not geared to simply meet minimum building code requirements. Similarly, older, leaky roofs too often are patched using temporary repair methods rather than removed and properly retrofitted. As a result, potential energy savings are lost, the building environment continues to degrade, and the roofs are ill-equipped to handle new energy technologies such as solar panels. The specific equipment, materials and services within S. 3079's purview – including, for example, roofing retrofits – will push commercial buildings to the next level of energy efficiency, thereby generating greater savings on utility bills and more reductions in greenhouse gas emissions. However, because these state-of-the-art technologies come at a significant cost, it is not as though commercial real estate operators would install or pursue these extra measures in all cases. This is precisely why Building STAR's incentives will prove so valuable. The

legislation's rebates and financing provisions will provide the means for building owners to go beyond current regulations and bring their assets to higher strata of energy performance.

Once enacted into law, the Building STAR program could be up and running within 30 to 60 days, using public funding to leverage *three to four times* as much private investment. The service providers (e.g., contractors or energy service companies) will be the primary marketers of these commercial rebates, so Building STAR has natural "aggregators" that reflect the existing means by which commercial property owners already contract with firms in the energy services arena to perform retrofit projects. Indeed, some Real Estate Roundtable members retain firms precisely for the purpose to navigate energy efficiency rebate programs. I fully expect these established relationships will be fully mobilized to capture any available incentives that S. 3079 offers.

Building STAR will help drive demand for commercial building efficiency upgrades, because its rebates are based on, and can be claimed *in addition to*, successful incentive programs currently operated by states and utilities. I want to reiterate this latter point: S. 3079's rebates would not supersede existing programs but, rather, are designed to complement those successful utility and state rebate measures that are already in place.

Rebate Process

S. 3079 directs the federal government to establish rules within 30 days after enactment, to swiftly implement the Building STAR rebate program. A simple and straightforward process is in order and can be easily accomplished, to replicate existing procedures that building owners and their contractors already manage through state and local rebate measures. Commercial real estate professionals are already accustomed to seeking rebates for the complete array of products and services in S. 3079, such as lighting, energy audits, windows, insulation, and more. Moreover, many Roundtable members have senior sustainability managers whose very job is to ensure maximum energy savings, greenhouse gas emissions reductions, and overall environmental performance. They already navigate energy efficiency rebate programs with great sophistication and ease.

S. 3079's implementing procedures should track the following simple steps:

1. A building owner (or its designee contractor) will propose energy-efficient upgrades using the list of products and services set forth in S. 3079. Alternatively, the building owner could find a licensed contractor, energy service company (ESCO), or other provider to propose performance improvement measures, using this same list. The rebate levels for these products and services are already established in the Building STAR legislation, after months of collaboration among engineers and other experts who developed the bill's precise equipment and services specifications. This up-front work was undertaken to avoid the need for federal officials to determine appropriate rebate and performance levels, and the time delays that such a deliberation would entail.
2. The building owner electronically submits an application (as described in the legislation) to the federal government to be placed in a "pipeline" for this rebate. Applications in the pipeline are prioritized on a first-come, first-served basis and enable the government to gauge the number of applicants and determine how many projects the program will be able to fund.

3. The federal government then sends an electronic confirmation to those building owners whose projects will, in fact, be funded.
4. A building owner then installs the equipment or undertakes the services for which rebates are sought – *except* for that portion covered by Building STAR’s incentives.
5. The building owner signs a confirmation certifying that the work specified in the application has been completed according to the requirements outlined in S. 3079. Alternatively, the building owner has the option to have a third-party verifier confirm that the work has been properly completed. Either way, the confirmation is then sent electronically to the government.
6. An independent third-party verifier contracted by the government reviews the confirmation to ensure its accuracy. If the confirmation is accurate, the rebate money is then disbursed to the building owner (or in a given case, where it has been assigned to a contractor), within 30 days of receipt of the confirmation.
7. Following the completion of the retrofit, 10 percent of the projects participating in this program will undergo an on-site evaluation by a certified independent entity to verify that the project complied with the application submitted to the government and the program’s requirements. If the verification process finds evidence of fraud or falsification in the process, building owners are subject to legal penalties as prescribed in S. 3079.

Aside from the rebate components of S. 3079, the financing provisions of this bill are similar to those in the Home STAR program. The Building STAR legislation proposes to create mechanisms by which commercial real estate owners can obtain capital to cover, and re-pay, the costs of any retrofit project not covered by rebate dollars. While some commercial building owners might not need financing for the remaining non-rebate portion of an upgrade project, the synergies created by S. 3079’s financing title and its proffered rebates will spur other real estate professionals to act on the full suite of retrofit measures under the Building STAR umbrella.

BUILDING STAR’S JOB CREATION, ENERGY, AND ENVIRONMENTAL BENEFITS

Job Creation Potential

Building STAR is a cost-effective way to create thousands of American jobs by helping make commercial buildings more energy efficient. As noted earlier, funding of \$6 billion for Building STAR would spur \$18 to \$24 billion in total program spending, creating 150,000 –200,000 jobs. Appendix II (attached) shows the job creation potential, including for small businesses, in the states represented by *every Member of this Committee*.

While the rest of the job market appears to be slowly stabilizing, construction unemployment is still on the rise. Unemployment within the industry rose from 18.7 percent in November to 27 percent today. In February, non-residential specialty contractors shed 1,500 jobs per day.

Energy efficient retrofits provide a prime opportunity to provide jobs for high-skilled workers, and also to help property owners and low-income people in multi-family residential buildings save substantial amounts on their energy bills.

Expanding Opportunity for Small Businesses

Small businesses are essential engines of job growth and economic recovery. So it comes as good news that Building STAR will directly benefit thousands of high-skilled sheet metal, electrical, mechanical, plumbing, painting, finishing and other contractors who perform the work of retrofitting commercial and multi-family buildings. Indeed, some 91 percent of these firms have fewer than 20 employees. On the very largest commercial retrofit projects, much of the work is normally sub-contracted to dozens of small firms. Moreover, approximately 63% of the manufacturers that would provide materials and equipment for retrofits are firms that employ less than 20 people making insulation, doors, windows, or parts for durable equipment.

Finally, thousands of small businesses are likely to benefit from reduced energy bills and operating costs that result from an energy efficiency retrofit under Building STAR. For example, EPA experts estimate that if a restaurant cuts its energy costs by just 20 percent, profits could increase by 30 percent or more. Industry-wide, that is a savings of \$1.6 billion a year. That is why the National Restaurant Association endorses Building STAR.

Ability to take advantage of Building Star's rebates now

At the Real Estate Roundtable, we conducted an informal survey of a portion of our Sustainability Policy Advisory Committee members to get a sense of how they would greet Building STAR rebates, whether the incentives would truly be useful, and how long it would take to start building modernization projects and hire workers. The responses we received were highly enthusiastic. ***We found that the vast majority of respondents would be able to take advantage of these rebates immediately.*** That is, there are a substantial number of projects ready to be implemented that will utilize S. 3079's rebates and financing opportunities. The results of our informal survey are attached at Appendix III and show:

- Respondents identified 19 office and multifamily projects that would seek rebates across all of Building STAR's various energy efficiency components.
- These projects would modernize buildings that cover almost 4.2 million square feet in space.
- This universe of respondents would seek approximately \$1.55 million in rebates for these projects, with total renovation costs approaching \$8 million.
- Building STAR rebate dollars for these projects can be quantified at \$0.37 per square foot, compared to total retrofit project costs of \$1.90 per square foot.

Should Building STAR be enacted into law, building owners, contractors, ESCOs, manufacturers, and others would immediately begin implementing this program. Painters, drywallers, and related industries would benefit from such retrofits as well, boasting a ***"multiplier effect"*** due to Building Star upgrades. In addition, based on a study by Lawrence Berkeley National Laboratory, we believe that a \$6 billion public investment in Building STAR would result in improvements in about 425,000 buildings by the end of 2011 – or, 9 percent of U.S. commercial buildings.

Energy and environmental benefits

Occupants and tenants in commercial buildings, and their electricity demands and usages, account for 46 percent of all building energy use in the United States. The American Council for an Energy-Efficient Economy (ACEEE) estimates that Building STAR would yield \$3.3 billion annually in energy savings between now and 2011. Modernization projects undertaken as a result of S. 3079 would result in greenhouse gas reductions equal to taking 3.95 million cars off the road. This is also equivalent to avoiding the fossil fuels that would be burned from 33 300-megawatt peaking power plants.

The Air Conditioning, Heating, and Refrigeration Institute indicates that, with the Building STAR or similar provisions, we could retire – and replace -- as many as 4,000 ozone-depleting CFC chillers across North America. This would achieve energy savings of 15 trillion BTUs per year and save the amount of energy equivalent to that consumed annually by approximately 151,000 average U.S. households. It also would reduce CO₂ emissions by an amount equivalent to removing 18,864 passenger vehicles from the road (2007 data). It also would save building owners \$430 million per year in energy costs.

Another area where there is significant potential for energy savings is commercial roof replacements. The replacement of 6% of commercial roof space in the U.S. each year with high efficiency roof systems insulated at levels required under Building Star would result in a CO₂ emissions savings equivalent to the annual emissions of roughly 27 coal fired power plants or 105 million metric tons of CO₂. The 10-year cumulative energy cost savings in this country would be \$12.2 billion. Energy savings would be 648 trillion Btu (0.65 quads) for site energy or 1,464 trillion Btu (1.46 quads) for source energy.

Building STAR rebates would facilitate energy efficient retrofits that also would create better air quality, healthier workplaces, and other positive attributes. Because retrofits frequently replace failed building components that have degraded the interior environment, they can improve air quality and occupant health. In addition, the installation of new energy-saving technologies such as daylighting and advanced climate controls can increase worker productivity.

CONCLUSION

The Building STAR program proposed by S. 3079 picks up where Home STAR leaves off. Building STAR provides significant incentives to modernize the vast and diverse commercial real estate stock in the United States, with high efficiency equipment, materials, and services. This Committee is right to consider legislation that furthers job creation, lowers energy costs, and curtails fossil fuel dependence. Building STAR would stimulate the economy, put people back to work, save energy and money, and reduce greenhouse gas emissions. Simply put, however, those critical objectives cannot be fully realized unless Congress authorizes energy efficiency incentive programs that address *both* the commercial *and* residential sectors.

APPENDIX I: LIST OF BUILDING STAR ENDORSERS

<p>The <i>Rebuilding America Coalition</i></p> <ul style="list-style-type: none"> • A. O. Smith Corporation • Allianz of America • American Council for an Energy-Efficient Economy • American Institute of Architects • American Society of Heating, Refrigerating and Air-Conditioning Engineers • Apollo Alliance • Association for Facilities Engineering • Blue Green Alliance • Capital Markets Partnership • Capital Markets Partnership on Green Building Underwriting Standards • Center for American Progress • Ceres • Change to Win • Conservation Services Group • Consumer Federation of America • Council of North American Insulation Manufacturers Association • Danfoss • Design-Build Institute of America • Digital Energy Solutions Campaign • DuPont • Eaton Corporation • Energy Future Coalition • Environmental and Energy Study Institute • Finishing Contractors • Green for All • Greenlink Alliance • Hannon Armstrong • HaydenTanner, LLC • HD Supply • HID Labs • Ingersoll Rand/Trane • Institute for Building Technology and Safety 	<ul style="list-style-type: none"> • Institute for Market Transformation • Intel • International Association of Heat and Frost Insulators and Allied Workers • International Association of Plumbing and Mechanical Officials • International Code Council • International Council of the Employers of Bricklayers and Allied Craft Workers • Johns Manville • Johnson Controls • Jones Lang LaSalle • Knauf Insulation • Lime Energy • Mechanical Contractors Association of America • National Association of Energy Service Companies • National Association of State Energy Officials • National Electrical Contractors Association • National Electrical Manufacturers Association • National Energy Management Institute • National Housing Trust • National Insulation Association • National Union Insulation Contractors Alliance • Natural Resources Defense Council • Plumbing-Heating-Cooling Contractors Association • Polyisocyanurate Insulation Manufacturers Association • The Potomac Energy Fund • Service Employees International Union • Service Employees International Union, Local 32BJ • Serious Materials, Inc. 	<ul style="list-style-type: none"> • Sheet Metal and Air Conditioning Contractors' National Association • Sheet Metal Workers' International Association • ShoreBank • Siemens Corporation • The Stella Group, LTD • Sun Day Campaign • Sustainable Alternatives Consulting, Inc. • Turner Foundation • United States Green Building Council • United Technologies Corporation • Virginia Tech Advanced Research Institute • Virginia Tech Energy Efficiency Partnership • Wider Opportunities for Women • Window and Door Manufacturers Association <p>Other Building STAR Participants</p> <ul style="list-style-type: none"> • Air Conditioning, Heating and Refrigeration Institute • Alliance to Save Energy • American Architectural Manufacturers Association • Associated General Contractors of America • Association of State Energy and Technology Transfer Institutions • Building Owners and Managers Association • GridPoint • The Linc Group • Lockheed Martin • National Restaurant Association • National Roofing Contractors Association • National Union Insulation Contractors Alliance • The Real Estate Roundtable • Thermafiber, Inc. • United Union of Roofers, Waterproofers and Allied Workers
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APPENDIX II: JOBS CREATED BY BUILDING STAR FOR SAMPLE STATES

	2007 Jobs Supported by Non Res. Const	Construction Firms	Small Businesses	Commercial Establishments	Building STAR Retrofits	Building STAR Program Size	Building STAR Jobs
AK	25,000	3,000	94%	20,198	1,111	\$47,185,380	590
NC	477,000	28,000	91%	227,906	12,534	\$532,420,597	6,655
WY	37,000	3,000	94%	20,765	1,142	\$48,509,972	606
KS	113,000	8,000	91%	77,157	4,243	\$180,249,647	2,253
ID	93,000	9,000	95%	47,411	2,607	\$110,758,791	1,384
AZ	372,000	16,800	85%	142,925	7,860	\$333,892,981	4,174
UT	197,000	11,000	92%	71,880	3,953	\$167,921,830	2,099
KY	193,000	9,200	90%	93,539	5,144	\$218,520,312	2,732
AL	213,000	10,000	88%	105,627	5,809	\$246,759,587	3,084
TN	307,000	21,100	88%	137,885	7,583	\$322,118,830	4,026
AR	111,000	7,000	91%	67,648	3,720	\$158,035,280	1,975
VT	21,000	3,000	95%	22,341	1,229	\$52,191,731	652
IN	407,000	16,000	91%	152,858	8,407	\$357,097,872	4,464
MI	297,000	25,000	94%	235,442	12,948	\$550,025,757	6,875
CO	296,000	20,000	92%	157,882	8,683	\$368,834,645	4,610
NH	50,000	5,000	94%	39,453	2,170	\$92,167,779	1,152
NM	97,000	6,000	89%	46,869	2,578	\$109,492,602	1,369
ND	30,000	2,000	93%	21,518	1,183	\$50,269,086	628
OK	165,000	9,000	91%	91,235	5,018	\$213,137,843	2,664
SD	41,000	3,000	94%	25,869	1,423	\$60,433,637	755
LA	220,000	9,000	88%	104,662	5,756	\$244,505,211	3,056
WA	319,000	25,000	93%	184,542	10,149	\$431,116,170	5,389
NJ	242,000	25,000	94%	243,350	13,383	\$568,499,962	7,106

Notes: Jobs, firms, and small business data provided by the Associated General Contractors. The number of commercial establishments is from Census 2007 data. Building STAR retrofits based on \$3.17 per square foot retrofit cost (per a study by Lawrence Berkeley National Labs) and \$18B program spending for 424,000 total retrofits. Program size uses average building size of 13,400 square feet (per the Energy Information Agency) times \$3.17 per square foot. Jobs created assumes 12.5 direct and indirect jobs per \$million spent.

**APPENDIX III: SURVEY OF REAL ESTATE ROUNDTABLE MEMBERS,
ANTICIPATED USE OF BUILDING STAR REBATES**

	Type	Location	Size	Age	Total Rebate	Total Work	Rebate/ Sq. Ft	Cost/Sq. Ft.	Retrofit Measures Proposed
1	Office	NY, NY	600,000	50	\$16,400	\$95,000	\$0.03	\$0.16	VSDs,
2	Office	Boston, MA	228,000	27	\$7,500	\$20,000	\$0.03	\$0.09	HVAC Test
3	Office	WDC	244,000	11	\$2,000	\$14,000	\$0.01	\$0.06	Interior Lighting
4	Office	Woodland Hills, CA	232,000	37	\$100,000	\$360,000	\$0.43	\$1.55	VSDs, Interior Lighting, Commissioning
5	Office	Newport Beach, CA	76,700	30	\$39,000	\$143,000	\$0.51	\$1.86	VSDs, Interior Lighting, Exterior Lighting, EMCS, Commissioning
6	Office	Arlington, VA	276,000	43	\$44,000	\$240,000	\$0.16	\$0.87	VSDs, Interior Lighting, Commissioning
7	Office	WDC	875,000	25	\$449,000	\$1,761,000	\$0.51	\$2.01	VSDs, EMCS
8	Office	Miami, FL	299,000	26	\$106,000	\$992,000	\$0.35	\$3.32	Window Films, Interior Lighting, EMCS
9	Office	Coral Gables, FL	232,000	23	\$96,000	\$641,000	\$0.41	\$2.76	Window Films, Interior Lighting, EMCS
10	Office	Coral Gables, FL	93,400	49	\$16,000	\$278,000	\$0.17	\$2.98	Window Films, EMCS
11	Office	Sacram., CA	338,500	22	\$213,000	\$607,000	\$0.63	\$1.79	Boiler/ H2O Heater, Interior Lighting, Audit, EMCS
12	Office	King of Prussia, PA	75,000	23	\$300,000	\$1,740,000	\$4.00	\$23.20	Window Films, Windows, Roofing, Boiler/H2O Heater, Interior Lighting, Audit, EMCS, Commissioning, Training
13	Office	Radnor, PA	101,000	34	\$20,000	\$175,000	\$0.20	\$1.73	Roofing
14	Office	Cherry Hill, NJ	61,000	24	\$17,000	\$85,000	\$0.28	\$1.39	Roofing
15	Office	Cherry Hill, NJ	76,000	21	\$21,000	\$104,000	\$0.28	\$1.37	Roofing
16	Office	Exton, PA	36,000	20	\$29,000	\$160,000	\$0.81	\$4.44	Roofing
17	Office	Plymouth Mtg., PA	32,000	24	\$26,000	\$199,000	\$0.81	\$6.22	Roofing
18	MF	NY, NY	164,000	26	\$37,000	\$317,000	\$0.23	\$1.93	Boiler/ H2O Heater
19	MF	Woodbury, NJ	148,000		\$7,400	\$25,000	\$0.05	\$0.17	Audit
			4,187,600		\$1,546,300	\$7,956,000	\$0.37	\$1.90	