

USING EXECUTIVE AUTHORITY TO ACHIEVE GREENER BUILDINGS:

*A GUIDE FOR POLICYMAKERS TO ENHANCE SUSTAINABILITY AND
EFFICIENCY IN MULTIFAMILY HOUSING AND COMMERCIAL
BUILDINGS*

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I. EXECUTIVE SUMMARY

The Obama Administration has tremendous, untapped opportunities to use legal tools already at its disposal to enhance the energy efficiency and sustainability of the nation's multifamily and commercial buildings¹ – all without seeking new funds or authority from Congress. This report presents an extensive menu of options, spanning across a wide range of programs, which the Administration could begin implementing immediately to advance a high performance, efficient green buildings agenda. All told, the programs identified in this report have the potential to directly provide or facilitate over \$72 billion in funding or loan guarantees,² and can leverage hundreds of billions of dollars in private investment through instruments such as mortgage insurance and regulation of the real estate lending market. Even a small fraction of this funding would, if directed to high-performing energy efficient and sustainable buildings, stimulate significant new “green” investments and job creation. At the same time, these actions would save taxpayer dollars, increase energy security, reduce greenhouse gas reductions, and create healthier living and working environments.

This review identifies a number of worthwhile opportunities to “green” federal policy on multifamily and commercial buildings. Some of the most promising options with the largest reach include:

- Reforming appraisal and underwriting practices at Fannie Mae and Freddie Mac (p. 28);
- “Greening” federal banking regulation (p. 6);
- Promoting flexible FHA insurance products, especially Section 241 (p.33);
- Integrating energy efficiency and sustainability criteria into competitive grants and funding formulas (pp. 39, 54, 57, 59, and 61);
- Strengthening minimum property standards for federal housing and economic development programs to reflect energy efficiency and sustainability standards;
- Improving performance standards applicable to federal buildings and leases (p. 79);
- Refining guidance applicable to the energy efficient commercial buildings tax deduction and the national historic preservation tax credit (p.82, 86);
- Using SBA funding mechanisms to support small business energy efficiency investments (p.71); and
- Streamlining Title 17 loan guarantees to make them suitable for buildings (p.11).

¹ As used in this report, the phrase “energy efficient and sustainable buildings” refers broadly to practices commonly thought of as “green building”: minimizing energy and water consumption of the building in operation; maximizing use of salvaged, recycled, renewable, and locally sourced materials; protecting indoor air quality through use of natural and nontoxic materials; and siting buildings in walkable or transit-oriented developments to reduce reliance on greenhouse gas-intensive transportation options.

² This figure reflects fiscal year 2010 funding levels, and does *not* include temporary spending increases appropriated under the American Recovery and Reinvestment Act (“Recovery Act”). It also does *not* include private loans insured through the Federal Housing Administration, or the volume of mortgages purchased or guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae.

II. INTRODUCTION

Increasing energy efficiency, promoting water conservation, reducing greenhouse gas emissions, and enhancing the overall sustainability of the built environment – in other words, “green building” – has been widely acknowledged to have important benefits.³ Compared to conventional buildings, green buildings achieve dramatic savings in energy consumption; reduce energy-related greenhouse gas emissions and air pollution; alleviate burdens on local water supplies; and improve the health and productivity of people who live and work in these buildings. As a result of these benefits, green buildings often have enhanced property values and occupancy rates, and thus make for more secure real estate investments than conventional properties. Moreover, the construction of green buildings drives demand for jobs in forward-looking industries – including energy auditing, sustainable design and engineering, installation of energy-efficient equipment, and manufacturing of environmentally friendly materials and fixtures.⁴

The Case for an Active Federal Role. Despite their clear advantages, there are a number of barriers, both market and regulatory, which hinder the widespread adoption of green building practices.⁵ Although the federal government has recently implemented policies directed at encouraging green building practices – especially in the area of energy efficiency⁶ – there are also instances in which federal programs fail to address these barriers and overlook opportunities to promote green building.

Given the sustained economic crisis that has especially devastated developers, property owners and the building trades, the case for a coordinated federal effort to utilize all existing authorities to remove barriers to economic activity in this field has never been more compelling. This need is particularly great in the large multifamily residential and commercial building sectors – both of which have received relatively little attention and support from current initiatives, and are uniquely susceptible to the problem of “split incentives” between developers, landlords, and tenants.

³ See generally, e.g., Bill Reed et al. *The Integrative Design Guide to Green Building* (2009); General Services Administration, *Energy Savings and Performance Gains in GSA Buildings: Seven Cost-Effective Strategies* (2009); Kim M. Fowler & Emily M. Rauch, *Assessing Green Building Performance: A Post Occupancy Evaluation of 12 GSA Buildings* (Pacific Northwest National Laboratory 2008); Davis Langdon, *The Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in Light of Increase Market Adoption* (2007); Greg Kats, *Greening Our Build World: Costs, Benefits, and Strategies* (2009).

⁴ See Department of Energy, *The Business Case for Sustainable Design in Federal Facilities* 2-34 (2003), available at http://www1.eere.energy.gov/femp/pdfs/buscase_section2.pdf.

⁵ See discussion in the Appendix to this report. See also, e.g., Environmental Protection Agency, *Removing Market Barriers to Green Development* (2008); Congressional Research Service, *Energy Efficiency in Buildings: Critical Barriers and Congressional Policy* 4-8 (2009); William H. Golove & Joseph H. Eto, *Market Barriers to Energy Efficiency: A Critical Reappraisal of the Rationale for Public Policies to Promote Energy Efficiency* (Lawrence Berkeley National Laboratory LBL-38059, 1996).

⁶ Congressional Research Service, *Issues in Green Building and the Federal Response: An Introduction* 22-27 (2009).

What The Administration Can Do. Understanding that new legal authorities and new funding sources are increasingly difficult and time-consuming to obtain, a coalition organized by the U.S. Green Building Council (USGBC) completed an extensive review of existing federal authorities and programs to identify opportunities for immediate action to transform the multifamily and commercial building sectors. That review, the results of which are presented here, reveals that the Administration is authorized to play a more active and supportive role in encouraging energy efficient and sustainable buildings.

The discussion that follows identifies the key authorities that are available to the Administration and proposes ways in which they can be productively employed to support energy efficiency and sustainability in multifamily and commercial buildings. The authorities discussed here span a wide range of programs – from the traditional affordable housing programs administered by the Department of Housing and Urban Development, to tax credits and deductions administered by the Internal Revenue Service, to standards issued by the National Park Service. For each program, the relevant statutory basis is explained and known legal limitations are identified.

In almost all cases, the options described herein would require no additional appropriations. Moreover, some of these options do not even require rulemaking and could be implemented in relatively short order – generating rapid economic and environmental returns. Other options may prove highly compatible with ongoing reform efforts within the administration. For example, the Department of Housing and Urban Development has recently announced its intent to restructure the Section 202 and 811 programs for elderly and disabled housing, and to streamline and reform its rental assistance programs; as part of this process, some of the options proposed in this report could be integrated into the affected programs.⁷

Among the more promising opportunities identified in this report are:

⁷ Department of Housing and Urban Development, *Investing in People and Places: FY 2011 Budget 3*, 16 (2010).

SELECTED OPPORTUNITIES TO “GREEN” FEDERAL POLICY ON MULTIFAMILY AND COMMERCIAL BUILDINGS

- **Greening the Federal Housing Enterprises.** In its capacity as overseer of Fannie Mae and Freddie Mac, the Federal Housing Finance Agency (FHFA) has authority to:
 - Direct both institutions to reform their underwriting and appraisal standards to appropriately value energy efficiency and sustainability features;
 - Encourage both institutions to encourage the development of a secondary market for mortgages secured by energy efficient and sustainable buildings; and
 - Direct both institutions to gather and disseminate information on the financial performance of mortgages secured by energy efficient and sustainable buildings.
- **Reforming Federal Bank Regulation.** The four agencies (OCC, FRB, FDIC, and OTS) responsible for establishing real estate lending and appraisal standards for insured depository banks can work jointly to reform those standards to properly value energy efficient and sustainable buildings, and make proper administration of those standards a key element of supervisory review.
- **Promoting Suitable FHA Insurance Products.** The Federal Housing Administration (FHA)’s Section 241 program for multifamily housing is an underutilized source of affordable capital for energy efficiency and sustainability retrofits. FHA could work to ensure that this product is publicized and appropriately tailored to the needs of green buildings.
- **Integrating Energy Efficiency and Sustainability Criteria Into Competitive Grants and Funding Formulas.** A variety of programs present opportunities for the federal government to incentivize energy efficiency and sustainability investments by incorporating appropriate criteria into competitive grant applications or formulas for fund allocations. Examples of such programs include:
 - Section 9 funds for public housing authorities;
 - Section 202 and Section 811 funds for elderly and disabled housing;
 - HOPE VI grants for neighborhood revitalization;
 - Programs administered by the Rural Housing Service (RHS).
- **Strengthening Minimum Property Standards to Reflect Energy Efficiency and Sustainability Standards.** The Department of Housing and Urban Development (HUD) and the RHS both have authority to establish minimum standards for housing receiving federal assistance. Where possible, these standards could be strengthened to reflect ambitious yet achievable energy efficiency and sustainability goals.
- **Improving performance standards applicable to federal buildings and leases.** The Department of Energy (DOE) has authority to issue stronger energy efficiency and sustainability standards applicable to new federal buildings, and the General Services Administration (GSA) can reform its standard leases to include innovative incentives and mandate improved performance.
- **Refining guidance applicable to the energy efficient commercial buildings tax credit and the national historic preservation tax credit.** The Internal Revenue Service (IRS) and National Park Service can provide detailed guidance for energy tax benefits under their jurisdiction, in order to encourage taxpayers to make use of these programs.
- **Using SBA Funding Mechanisms to Support Small Business Energy Efficiency Investments.** The Small Business Administration (SBA) has authority to promote the use of its 504 and Section 7(a) loan guarantee programs to carry out energy efficiency and sustainability retrofits, and to establish pilot programs to experiment with different financing terms for these types of projects.
- **Streamlining Title 17 Loan Guarantees to Make Them Suitable for Buildings.** DOE can reform its Title 17 loan guarantee program to allow it to be used for energy efficiency and renewable energy projects, for example by permitting multiple building owners to aggregate energy efficiency and renewable energy investments into a single application.

In general, the options discussed below are organized as follows. First, the authorities have been separated into distinct sections that address, respectively, “cross-cutting” programs, multifamily buildings, and commercial buildings. Second, the programs within each section have been arranged so that those with the broadest scope and largest potential impact are listed first. Third, within each program, the suggested policy options have been arranged to emphasize those that provide incentives or encouragement to stimulate energy efficiency and sustainability investments. Of course, this ordering is not intended to suggest that any of the programs or options are not worthwhile opportunities; to the contrary, the Administration may find that some programs that are narrower in scope may nonetheless lend themselves to uniquely straightforward and fruitful policy changes.

Although this memorandum is comprehensive, it does not offer an exhaustive catalogue of every authority or program that could possibly be utilized. Indeed, the authors consider this a living document and intend to add to this product as more opportunities become apparent. Accordingly, the absence of any particular program from the following discussion should not be taken as a judgment on its potential to promote energy efficiency and sustainability. However, the options presented here do reflect extensive input from the sponsors of this project, who have considerable experience and expertise amassed through years of designing, developing, operating and advocating for high performing, sustainable buildings. In addition, this memorandum benefited greatly through consultations with officials and staff at various federal agencies and in Congress. The contributions of these organizations and individuals, who are recognized in the Acknowledgments to this memorandum, should not be interpreted as an endorsement of any of the specific options presented in this report.

The sponsors of this effort share the belief that the Administration has a great opportunity to transform the multifamily and commercial building sectors using its existing authorities. The sponsors also hope that this memorandum provides a useful resource for the Administration as it considers the use of existing authorities to enhance the energy efficiency and sustainability of the nation’s building stock.

III. OPPORTUNITIES TO ENHANCE THE USE OF EXISTING AUTHORITIES IN BOTH THE MULTIFAMILY RESIDENTIAL AND COMMERCIAL BUILDING SECTORS

A. FEDERAL BANK REGULATION	
Revise Real Estate Appraisal, Underwriting, and Lending Standards to Recognize Value of Energy Efficiency and Sustainability in Enhancing Property Value, Reducing Operating Costs, and Minimizing Risk	
Agency	Federal Deposit Insurance Corporation (FDIC) Office of the Comptroller of the Currency (OCC) Federal Reserve Board of Governors (FRB) Office of Thrift Supervision (OTS)
Program	-
Authority	12 U.S.C. § 1811 et seq. 12 U.S.C. § 3331 et seq.
Description	<p>A key market barrier to the wider adoption of energy efficient and sustainable building practices is insufficient financing. Furthermore, the lending institutions that finance and value real estate lack comprehensive understanding and appreciation of the economic, energy, and environmental benefits of green building.⁸ Banking institutions, by and large, have yet to adjust their appraisal and lending standards – or adequately train their employees – to recognize the unique assets of energy efficient and sustainable buildings, despite the considerable evidence that these green assets enhance the security of a mortgage by reducing operating costs, lowering maintenance risks associated with indoor air quality and mold, and increasing the marketability of the building. In addition, private initiatives to develop “green” underwriting standards⁹ have yet to gain widespread market acceptance.</p> <p>The ongoing distress in financial markets provides federal banking regulators with a unique opportunity to change this dynamic through their existing authority to set and enforce real estate lending and appraisal standards. Under the statute governing the FDIC, each of the major federal banking regulators (including FDIC, OCC, FRB, and OTS) is</p>

⁸ See Environmental Protection Agency, *Removing Market Barriers to Green Development* 25, 42-43 (2008); Cascadia, Vancouver Valuation Accord, & Cushman & Wakefield, *High Performance Green Building: What’s It Worth?* 3 (2009), available at <http://www.cascadiagbc.org/news/index.html/GBValueStudy.pdf>; Scott R. Muldavin, *Value Beyond Cost Savings: How to Underwrite Sustainable Properties* 1 (2010), available at <http://www.greenbuildingfc.com/Documents/Value%20Beyond%20Cost%20Savings--Final.pdf>.

⁹ Capital Markets Partnership, “Underwriting Standards,” http://www.capitalmarketpartnership.com/index.aspx?u=Underwriting_Standards (last visited January 23, 2010).

	<p>required to establish real estate lending standards for insured depository institutions subject to their jurisdiction.¹⁰ The statute requires that such standards generally “consider” three factors: the risk posed to the Federal Deposit Insurance Fund by real estate loans; the safe and sound operation of insured institutions; and the availability of credit.</p> <p>These lending standards are uniform across the federal agencies, and provide guidelines for banking policies in the area of loan portfolio management, underwriting standards, loan administration, and loan-to-value limits.¹¹ The lending standards are enforced, in part, during the regulators’ ordinary supervisory review of banks, in which examiners take into account the size and expertise of the real estate lending staff as well as the quality of the institution’s management and internal controls.¹²</p> <p>In addition, federal law requires the banking regulators to prescribe appraisal standards which must, at minimum, comply with the uniform standards issued by the Appraisal Foundation. The regulators may prescribe standards in addition to those established by the Appraisal Foundation if they make a written finding that the standards are necessary to properly carry out their statutory responsibilities.¹³</p>
Actions	<p>The federal banking regulators with responsibility for establishing real estate lending standards should revise those standards to, among other things:</p> <ol style="list-style-type: none"> 1. Require that regulated banks take into account the unique value proposition of energy efficient and sustainable buildings in managing the diversity of their loan portfolios. Establishing quantitative targets for mortgages secured by such buildings might be considered. 2. Require that underwriting standards take into account environmental features of buildings (especially reduced operating costs, enhanced productivity of building occupants, and – for sustainably located buildings – reduced transportation costs) in assessing a property’s long-term value, the ability of the property owner to service the mortgage, and the level of equity invested in the property. 3. Encourage the Appraisal Foundation to revise and enforce its Uniform Standards of Professional Appraisal Practice to account for valuation of

¹⁰ 12 U.S.C. § 1828(o) (2006). Note that any amendments to the real estate lending standards must be agreed to by the regulatory agencies noted above, “acting in concert.” 12 U.S.C. § 1828(o)(4).

¹¹ See 12 C.F.R. Part 208, App. C (Interagency Guidelines for Real Estate Lending Policies).

¹² *Id.*

¹³ 12 U.S.C. § 3339.

energy efficient and sustainable buildings. As necessary, federal appraisal standards should be revised to reflect “green” appraisal principles.

4. Advise regulated banks that their staffs’ level of expertise in valuing and underwriting energy efficient and sustainable buildings will be considered as part of regular supervisory review to ensure that the real estate lending standards are properly enforced. Training programs to educate bank appraisal personnel on the enhanced values of energy efficiency practices in buildings, and their impact on loan to value ratios, should be developed by federal banking regulators.

5. In exercising the regulatory authorities described above, take steps to take into account unique characteristics of innovative financing mechanisms such as property-assessed clean energy (PACE) bonds or similar tax-lien financing.

Since the statute requires that the agencies act “in concert” when revising lending standards, the President may consider issuing an Executive Order requiring that the agencies establish an interagency working group or similar forum to drive the actions described above.

B. EXECUTIVE ORDERS ON FEDERAL ENERGY MANAGEMENT Strengthen Incentives for Senior Management of Federal Agencies to Aggressively Implement Executive Order 13514	
Agency	Government-Wide
Program	New Executive Orders Building on E.O.13514
Authority	-
Description	Among other things, EO 13514 required federal agencies to develop targets for GHG reductions from direct emissions sources that are under federal control; emissions resulting from energy and water consumed by federal facilities; and emissions resulting from contractors, employee travel, and other activities supporting the federal government. The order also provided performance targets for water efficiency, sustainable building design, and waste reduction or recycling. To develop and implement these goals, the order required agencies to appoint Sustainability Officers from among senior management and develop agency-level strategic plans for sustainability.
Action	<p>1. Regular, detailed, and public disclosure of energy and water usage at all federal buildings could be a powerful tool for driving continuous improvements in performance. Such requirements are not currently required in EO 13514 or in statute (though agency energy reports to Congress are belatedly issued annually). Thus, the President should require in guidance for EO 13514 that the Federal Energy Management Program (FEMP) at the Department of Energy develop an accessible online database for the collection of energy and water performance statistics from all Federal buildings; promulgate standards for proper monitoring or measurement of these statistics; and present the data in an easily understood, summarized format. The President could also consider requiring that performance ratings be posted prominently inside all federal buildings. The guidance should direct federal agencies to contribute annually to the database, and lay out how they are to do so.</p> <p>In addition, the President should consider requiring all federal buildings to be certified under a credible operations and maintenance standard (such as LEED Existing Buildings Operations and Maintenance or an equivalent set of criteria), and disclose their scores, in order to identify areas for improving the overall environmental sustainability of existing federal buildings.</p> <p>2. The Office of Management and Budget (OMB) routinely applies exceedingly high discount rates to regulations or agency initiatives relating to energy efficiency and greenhouse gas reduction, making it difficult for agencies to provide favorable cost-benefit analyses. These rates range</p>

	<p>from 7% to as high as 20%, 35%, and 50% - much higher than discount rates based on private sector returns to capital or social rates of time preference. Because of these high discount rates, agencies may be deterred from undertaking many economically justified initiatives with long-term paybacks. The President should consider directing OMB to reconsider its cost-benefit policy, and apply lower discount rates that are more reflective of economic reality and less prejudicial to future generations.</p> <p>3. Sustainability Officers are more likely to be effective in their work if successful implementation of the executive order is included in their job descriptions (as well as the job descriptions of their entire team within the agency) and made part of their performance reviews. Thus, the President should issue a follow-on in the guidance to EO 13514 that directs the Office of Personnel Management to revise job descriptions for consistency with EO 13514, and to develop performance criteria for officials serving as Sustainability Officers and those they work with in their agencies.</p>
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C. TITLE 17 LOAN GUARANTEE PROGRAM Utilize DOE’s Innovative Technologies Loan Guarantee Program to Support Energy Efficiency Improvements	
Agency	Department of Energy
Program	Title 17 Loan Guarantee Program
Authority	42 U.S.C. § 16511 et seq.
Funding	Recovery Act: \$6 billion appropriated for the cost of loan guarantees to support renewable energy, biofuels, and electric transmission projects under temporary Section 1705 (42 U.S.C. § 16515) authority. No other appropriations have been made to cover the subsidy costs of Title 17 loan guarantees.
Description	<p>Title 17 of the Energy Policy Act of 2005 authorized DOE to issue loan guarantees for commercial projects that “avoid, reduce, or sequester” anthropogenic greenhouse gas emissions and that employ “new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued.”¹⁴ Renewable energy systems and end-use energy efficiency technologies are explicitly listed as projects that may be backed with a Title 17 loan guarantee.</p> <p>Under the Title 17 program, each loan guarantee has a “subsidy cost” that must either be paid through appropriations or financed by the applicant itself. Currently, no appropriations have been made to cover the subsidy costs of general Title 17 loan guarantees. However, the Recovery Act established a temporary “Section 1705” program under Title 17 that provided \$6 billion in appropriations for loan guarantees for renewable energy, electric transmission, and biofuels projects.¹⁵ Note that projects financed under this temporary authority need not utilize “new or significantly improved technologies” as is normally required for Title 17 loan guarantees.</p>
Action	<p>Title 17 loan guarantees can, in principle, be used to finance energy efficiency and renewable energy projects at both commercial and multifamily buildings. The Recovery Act’s temporary funding under Section 1705 would make this program a particularly affordable and attractive source of finance for renewable energy projects.</p> <p>A key step in making Title 17 work for the commercial and multifamily building sectors is to create a streamlined application program that reduces the high transaction costs usually associated with obtaining a loan</p>

¹⁴ 42 U.S.C. § 16513(a).

¹⁵ Recovery Act, §

	<p>guarantee. DOE should explore options for encouraging the aggregation of multiple projects into a single application, allowing the administrative costs of the application to be spread out among more sponsors. Alternatively, DOE could establish a process in which it provides loan guarantees to intermediaries (such as municipalities or utilities) which would then use the funding to carry out energy efficiency and renewable energy projects through innovative vehicles such as property-assessed clean energy (PACE) lending or energy performance contracts. In restructuring these procedures, DOE should also attempt to ensure that PHAs are able to access Title 17 loan guarantees for energy efficiency and renewable energy improvements.</p> <p>As part of this process, DOE should consider setting award selection criteria that reward applicants that incorporate broader sustainability principles (such as location efficiency, which also helps avoid GHG emissions as required by Title 17) into their designs.</p>
<p>Known limitations</p>	<p>The ordinary Title 17 loan guarantee authority may not cover many energy efficiency measures, because it requires that projects backed by loan guarantees use “new or significantly improved” technologies relative to those commercially in service in the United States. Some of the most commonly-used and cost-effective energy efficiency measures – such as caulking, insulation, or efficient windows – may not satisfy this standard. Thus, if DOE is to support such technologies through the Title 17 program, it should do so using the temporary Section 1705 authority (which does not require new or significantly improved technologies).</p>

D. FTA CAPITAL INVESTMENT GRANTS	
Provide Clear Guidance on Incorporation of Energy Efficiency and Sustainability Standards Into Applications for New Starts and Small Starts	
Agency	Federal Transit Administration (FTA)
Program	New Starts / Small Starts
Authority	49 U.S.C. § 5309
Funding	FY 2010: \$2.0 billion
Description	<p>The overall energy efficiency and sustainability of a building depends not just on how it is designed, but also on where it is located. Federal policies that encourage the integration of resource efficient and sustainable building with transportation and mobility options that reduce vehicle miles traveled are therefore crucial to maximizing the benefits of green building.</p> <p>Recent policy changes at FTA present new opportunities for the agency to use its capital investment grant programs to encourage energy efficient and sustainable building developments. The FTA administers discretionary grants for state and local transit projects under the New Starts program (for projects requesting \$75 million or more in federal funds)¹⁶ and the Small Starts program (for projects requesting less than \$75 million).¹⁷ The statute requires that New Starts applications be evaluated on the basis of, among other factors, “environmental benefits,” “economic development effects,” and “public transportation supportive land use policies and future patterns,” and gives FTA discretion to define “appropriate” criteria to be considered in evaluating each of these factors.¹⁸ Similarly, Small Starts applications are to be evaluated on the basis of “public transportation supportive land use policies,” “cost effectiveness,” and “effect on local economic development,” using criteria defined by FTA.¹⁹</p> <p>Consistent with the Department of Transportation’s broader livability initiative, FTA recently announced that it would revise regulations governing the allocation of New Starts and Small Starts grants in order to emphasize broader considerations of environmental impact, greenhouse gas reduction, and promotion of community development. This shift in program priorities would mark a dramatic departure from previous FTA policy, announced in 2005, under which projects were evaluated primarily on the basis of projected savings in commuting time and cost.²⁰</p>

¹⁶ 49 U.S.C. § 5309(d).

Action	FTA should use its authority to establish appropriate criteria for evaluating New Starts and Small Starts projects to include consideration of the extent to which proposed projects are coupled with the development of energy efficient and sustainable neighborhoods and developments. Although such criteria could be structured in a variety of ways, FTA could consider upgrading the score of project applications that include plans for the development of neighborhoods certified under recognized rating systems such as LEED for Neighborhood Development or Enterprise Green Communities, or that would enable specific existing developments to attain such ratings. Such practices would encourage communities to make holistic transit and development plans that devote appropriate attention to neighborhoods and buildings connected to transit.
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¹⁷ 49 U.S.C. § 5309(e).

¹⁸ 49 U.S.C. § 5309(d)(2)(B), (3)(K).

¹⁹ 49 U.S.C. § 5309(e)(2)(B), (4)(E).

²⁰ See Dear Colleague Letter from Ray LaHood, Secretary of Transportation (Jan. 13, 2010), available at http://www.fta.dot.gov/documents/Dear_Colleague_New_Starts_and_Small_Starts_Project.pdf.

E. ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANTS Ensure That State Strategies for Use of Energy Efficiency and Conservation Block Grants Include Appropriate Role for Multifamily and Commercial Building Sectors	
Agency	Department of Energy
Program	Energy Efficiency and Conservation Block Grants (EECBG)
Authority	42 U.S.C. § 17151 et seq.
Funding	This program did not receive any appropriations until the Recovery Act was passed. According to the Department of Energy, approximately \$900 million in Recovery Act funding for EECBG remains to be awarded; however, about half of this funding will be distributed through a competitive process for which applications have already been submitted.
Description	<p>The EECBG program channels flexible grants to local and state governments to fund the implementation of strategies for, among other things, improving energy efficiency in the building sector and reducing fossil fuel emissions in an “environmentally sustainable” manner.²¹</p> <p>The statute creating this program leaves DOE very little discretion as to the allocation of funds among local governments, which must receive a total of 68% of EECBG funds based on a DOE-determined formula (which must, in turn, be based on population and other size characteristics provided in the statute). Another 28% of EECBG funds must be distributed to the states, with the majority of those grants being equally distributed, and the remainder given on the basis of a DOE-determined formula reflecting “any . . . criteria that the Secretary determines to be appropriate.”²² The remaining 4% of EECBG funds must be provided to Indian tribes and used for competitive grants authorized under 42 U.S.C. § 17156.</p> <p>The EECBG funds may be used for a variety of energy efficiency and renewable energy activities, including conducting residential and commercial building audits; providing financial incentives for energy efficiency improvements; grants to nonprofit organizations and governmental agencies for building retrofits; implementation of district energy; and deployment of onsite renewable energy devices on government buildings. DOE (in consultation with EPA, Transportation, and HUD) is also broadly authorized to designate additional appropriate activities that may be funded using EECBG funds, giving the agency</p>

²¹ 42 U.S.C. § 17152(b).

²² 42 U.S.C. § 17153. The formulas for state and local allocations of EECBG funds were published in the Federal Register on April 15, 2009, and do not appear to include any additional factors beyond a state’s population. See 74 Fed. Reg. 17,461, 17,464 (Apr. 15, 2009).

	<p>considerable scope to permit EECBG recipients to use grant funds for innovative programs.²³</p> <p>In order to receive EECBG funds, the statute requires states and local governments to prepare DOE-approved strategies for the use of those funds. The statute does not constrain DOE’s discretion to disapprove a strategy, only requiring that DOE provide reasons for its disapproval and allow a government to resubmit a strategy as often as necessary.²⁴ DOE’s broad power of disapproval appears to give the agency considerable latitude to influence state and local strategies for EECBG funds.</p>
Action	<ol style="list-style-type: none"> 1. DOE should confer with state and local governments, and advocates of affordable housing, energy efficiency, and green building, on whether additional uses of EECBG funds specific to the multifamily and commercial building sectors should be authorized under DOE’s authority to designate appropriate EECBG activities. For example, DOE could consider adding cost-effective water efficiency improvements to the list of appropriate activities, or allow for-profit owners of federally-assisted affordable housing to benefit from EECBG funds. 2. DOE should provide guidance on the preparation of energy efficiency and conservation strategies with a view to encouraging states to give appropriate emphasis to cost-effective energy efficiency and green building efforts, especially in the multifamily housing and commercial building sectors. DOE’s authority to disapprove strategies is very broad and, in addition, a decision to emphasize the building sector in EECBG strategies would be consistent with the explicit purposes of the program.
Known Limitations	<p>The bulk of EECBG funding provided in the Recovery Act appears to have been awarded or will soon be awarded under pending application processes, so there are limited opportunities to redirect EECBG funds going forward unless additional appropriations are provided. The FY 2010 appropriations bill for the Department of Energy did not provide additional funding for EECBG. However, DOE guidance on the use of EECBG grants may be useful to state and local governments that are in the process of drawing down their EECBG funds. In addition, administrative efforts undertaken by DOE could make the program more effective for energy efficiency and green building when the program receives additional appropriations in FY 2011 or later.</p>

²³ 42 U.S.C. § 17154.

²⁴ 42 U.S.C. § 17155(b)-(c).

F. STATE ENERGY PLANS	
Update State Energy Plan Requirements and Reform Funding Allocation Formula to Reward States That Improve Energy Efficiency and Sustainability of Multifamily and Commercial Buildings	
Agency	Department of Energy
Program	State Energy Program
Authority	42 U.S.C. § 6321 et seq
Funding	Recovery Act: \$3.1 billion (almost entirely awarded) FY 2010 Appropriations: \$36 million
Description	<p>Under the State Energy Program, DOE provides formula grant funding to state governments to carry out energy conservation programs specified in state energy conservation plans. DOE is required by statute to issue regulations that “prescribe guidelines with respect to measures required to be included in, and guidelines for the development, modification, and funding of, State energy conservation plans.”²⁵ These plans must include, among other things, mandatory lighting efficiency standards for public buildings; mandatory energy efficiency standards and policies for procurement by state and local governments; and mandatory thermal efficiency standards for new and renovated buildings of all types (except US government buildings).²⁶ DOE’s regulations implementing the program²⁷ do not go beyond these requirements, but do provide detail within each category (including providing model codes as minimum benchmarks for features such as lighting efficiency).</p> <p>42 U.S.C. § 6323(b) gives DOE considerable discretion in determining how much federal financial assistance to provide to State Energy Programs, because the allocation formula is not written into the statute. DOE is required to “consider” the number of people affected by the plan, the expected energy conservation benefits, and “such other factors as the Secretary deems appropriate.”</p>
Action	<p>1. As evidenced by regulations mandating that states meet minimum model code standards for lighting and thermal efficiency,²⁸ DOE has authority to interpret and provide detailed guidance on each of the mandatory elements of state energy plans, including mandatory lighting efficiency standards for public buildings; mandatory energy efficiency standards and policies for procurement by state and local governments; and mandatory thermal efficiency standards for new and renovated buildings. DOE should ensure that these minimum criteria are updated</p>

²⁵ 42 U.S.C. § 6322(b).

²⁶ 42 U.S.C. § 6322(c).

²⁷ 10 C.F.R. Part 420

²⁸ 10 C.F.R. Part 420.15(a) and (c)

	<p>(they currently refer to the 1993 Model Energy Code as a benchmark) and strengthened, ideally to match DOE-prescribed efficiency standards for Federal buildings. Notably, the State Energy Program regulations provide no detailed requirements for energy efficiency in state procurement policies.</p> <p>2. DOE could exercise its authority to establish appropriate factors for consideration of state energy plans, by amending its regulatory formula for distributing State Energy Program funds to account for state efforts to promote energy efficient and sustainable building practices (including sustainably located buildings that reduce transportation-related energy use) in multifamily and commercial buildings.</p>
<p>Known Limitations</p>	<p>DOE regulations at 10 C.F.R. 420.18 impose a number of limitations on the use of funds that are not found in the statute, such as a prohibition on the use of funds for construction or repair of any building or structure, or to conduct RD&D on experimental energy efficiency and renewable energy technologies. 10 C.F.R. 420.18(c) clarifies that demonstrations of commercially available energy efficiency and renewable energy technologies may be funded using State Energy Program funding. Although the Recovery Act waived limitations such as these for the use of Recovery Act State Energy Program funds for the purchase and installation of energy efficiency and renewable energy materials,²⁹ DOE should consider relaxing these regulatory limitations on State Energy Program funding provided through ordinary appropriations.</p>

²⁹ Recovery Act, Sec. 410(c).

G. VOLUNTARY BUILDING LABELS Expand EnergyStar and WaterSense Labeling Programs to Fully Cover Multifamily and Commercial Building Sectors	
Agency	Environmental Protection Agency (EPA) Department of Energy (DOE)
Program	ENERGY STAR WaterSense
Authority	42 U.S.C. § 6294a (ENERGY STAR) 33 U.S.C. § 1254 (WaterSense)
Description	<p>The ENERGY STAR program is a public information initiative that allows producers of highly efficient products and buildings to voluntarily label these goods as ENERGY STAR certified. The ENERGY STAR program was originally created by EPA under its general authority to develop nonregulatory pollution control strategies under Section 103 of the Clean Air Act. However, the Energy Policy Act of 2005 established specific ENERGY STAR program authority and placed the program under the joint supervision of EPA and DOE.³⁰ The new statute does not place any restrictions on the categories of products and buildings that can be incorporated into the ENERGY STAR program, requiring only that new categories and criteria (or revisions to the criteria for existing categories) be made after notice and public comment and with sufficient lead time to affected industries.</p> <p>The WaterSense program has no specific statutory basis, but is operated as a voluntary “partnership program” in which EPA signs partnership agreements with companies that agree to abide by WaterSense specifications for consumer products. EPA’s guidelines for the program cite Section 104 of the Clean Water Act,³¹ which among other things provides EPA with general authority to make grants and enter into contracts for demonstrations of pollution preventing technology.</p>
Actions	1. Currently, the ENERGY STAR label is available for multifamily residences, but only for individual units within a multifamily building that

³⁰ Under a 2009 memorandum of understanding between EPA and DOE, EPA assumed primary responsibility for managing Energy Star appliance standards (with significant DOE involvement in developing test procedures and metrics). DOE agreed to take primary responsibility for the National Building Rating Program, with EPA acting as “brand manager” for the use of Energy Star labels on whole buildings. See *2009 EPA-DOE Memorandum of Understanding* (2009), available at <http://www.energystar.gov/index.cfm?c=partners.mou>.

³¹ EPA, *WaterSense Program Guidelines 2* (2009), available at http://www.epa.gov/watersense/docs/program_guidelines508.pdf.

	<p>have their own heating, cooling, and hot water systems. The ENERGY STAR labeling program should be expanded to allow entire multifamily buildings to earn a single label, just as dormitories and other commercial buildings may obtain a single ENERGY STAR label.</p> <p>2. ENERGY STAR should be expanded to include commercial building types not currently within the program’s purview, such as multi-tenant retail facilities (i.e., malls). EPA should coordinate among mall owners and their tenant outlets to ensure optimal disclosure of energy consumption information so as to fully and fairly incorporate retail malls into ENERGY STAR’s suite of building labeling and benchmarking platforms.</p> <p>3. Current WaterSense standards fail to recognize products that avoid the use of water altogether, such as waterless commercial urinals. WaterSense standards should be revised to ensure that appropriate recognition is awarded to zero-consumption products. In addition, WaterSense standards should be extended to cover the energy efficiency of hot water pipes, which are an important source of energy loss in buildings.</p> <p>4. DOE should hold a stakeholder meeting to provide information and collect feedback on the direction of the National Building Rating Program, and provide an opportunity for stakeholders to comment on the program.</p> <p>5. The ENERGY STAR labeling program for consumer products should be strengthened by revising the labels to clearly identify top-performing products and products that meet the most recent ENERGY STAR specifications.</p> <p>6. EPA should develop and implement a transparent and fair delisting protocol to ensure that ENERGY STAR products are independently tested “off-the-shelf” and verified to comply with the label they are given. This measure will reinforce public confidence in the ENERGY STAR program and ensure that the label accurately rewards producers of efficient products.</p>
<p>Known limitations</p>	<p>The development of ENERGY STAR labels for additional multifamily residential properties and commercial spaces is sometimes constrained by the availability of adequate data. Socioeconomic factors and difficult-to-measure variables (such as customer traffic in a mall store) can also pose a challenge to developing credible and consistent energy benchmarking systems. This underscores the need for EPA to collaborate with the</p>

	Energy Information Administration to augment existing energy databases (principally the Residential Energy Consumption Survey and the Commercial Building Energy Consumption Survey) and obtain the data needed to expand ENERGY STAR for buildings.
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H. PRODUCT EFFICIENCY STANDARDS Strengthened Water and Energy Efficiency Standards for Consumer Products	
Agency	Department of Energy
Program	Appliance Efficiency Standards
Authority	42 U.S.C. § 6291 et seq.
Description	<p>The Energy Policy and Conservation Act of 1975 (EPCA) vested DOE with authority to set energy efficiency standards for a broad range of consumer products, and water efficiency standards for urinals, water closets, showerheads, and faucets. The statute provides initial energy and water efficiency standards for a list of 18 categories of products, and provides DOE with authority to designate additional categories of energy-using consumer products as “necessary and appropriate to carry out the purposes of this chapter,” subject to certain quantitative limits.³² The statute also requires DOE to consider revising these standards periodically to reflect “maximum improvement . . . which the Secretary determines is technologically feasible and economically justified.”³³</p> <p>The current language of EPCA reflects substantial revisions enacted in the Energy Policy Act of 2005 (EPAct 2005) and Energy Independence and Security Act of 2007 (EISA 2007). Those acts expanded the range of products subject to conservation standards; imposed updated and more stringent minimum standards on existing product classes; and revised the schedule for DOE review and revision of product standards. In early 2009, DOE also issued an aggressive multiyear schedule for redressing a backlog of unrevised product standards, and complying with the new mandates in EPAct 2005 and EISA 2007.³⁴</p>
Actions	<ol style="list-style-type: none"> 1. DOE should strengthen water efficiency standards where possible. Even after the significant reform efforts described above, current water efficiency standards for showerheads, faucets, urinals, and water closets date to 1992 and lag significantly behind the voluntary WaterSense standards established by EPA.³⁵ DOE should update and revise these standards to impose maximum technically feasible and economically justified improvements in efficiency, as required by the statute. 2. DOE should extend and strengthen energy efficiency standards where

³² 42 U.S.C. § 6292.

³³ 42 U.S.C. § 6295(m)(1), (o)(1).

³⁴ DOE, *Implementation Report: Energy Conservation Standards Activities 9* (2009), available at http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/seventh_report_congress_aug_09.pdf

³⁵ EPA, *National Efficiency Standards and Specifications for Residential and Commercial Water-Using Fixtures and Appliances* (2008), <http://www.epa.gov/watersense/docs/matrix508.pdf>

	<p>possible. While federal product efficiency standards should be significantly strengthened as a result of EPCA 2005, EISA 2007, and DOE’s multi-year schedule for updating standards, more could be done. DOE should accelerate the development of standards with the largest potential energy savings – including standards for low voltage dry type transformers, classes of reflector lamps that were not covered in standards promulgated in July 2009, and consumer electronics such as large television sets. In setting standards for television sets, DOE should bear in mind California’s promising Tier 2 standards and the development of international test procedures, and proceed in a manner that minimizes interference with these initiatives.</p>
<p>Known limitations</p>	<p>With respect to efficiency standards for showerheads, water closets, faucets, and urinals, EPCA instructs DOE to amend standards to match applicable ASME/ANSI standards, and permits DOE to waive preemption of state standards that are more stringent than applicable ASME/ANSI standards.³⁶ However, 42 U.S.C. § 6295(o) also specifically mentions water efficiency in its instruction to DOE to require “maximum improvement” that is technologically feasible and economically justified when amending standards under EPCA.</p> <p>Due to the constricted definition of “consumer product,” DOE does not appear to have authority to designate new classes of consumer products based solely on water consumption. In addition, water-consuming product classes that are already listed (such as dishwashers and clothes washers, standards for which were amended under EISA 2007) do not call for revised water efficiency standards for several years.³⁷</p>

³⁶ 42 U.S.C. § 6295(j), (k).

³⁷ 42 U.S.C. § 6295(g)(9)-(10).

I. RURAL ELECTRIFICATION ACT Use Rural Utilities Service Loan Authority to Provide Capital for Utility-Administered Energy Efficiency and Renewable Energy Projects	
Agency	USDA
Program	Rural Utilities Service
Authority	7 U.S.C. §§ 935-36
Funding	FY 2010 Appropriations: \$6.5 billion (principal amount of loan guarantees) and \$100 million (principal amount of insured loans) ³⁸
Description	<p>The Rural Electrification Act (REA) authorizes USDA’s Rural Utilities Service (RUS) to, among other things, guarantee loans by the National Rural Electric Cooperative Finance Corporation or “any other legally organized lending agency” to rural electric utilities in support of the purposes of the Act, which include “assisting electric borrowers to implement demand side management, efficiency and conservation programs, and on-grid and off-grid renewable energy systems.”³⁹</p> <p>In addition, the statute authorizes the RUS to make insured loans to rural electric utilities. Such loans may be made at an interest rate of 5% to utilities whose customers meet specific “hardship” criteria relating to rates paid and per capita income; alternatively, RUS can make loans to any rural electric utility at the prevailing interest rate for municipal bonds.⁴⁰</p>
Action	The Rural Electrification Act specifically contemplates the use of RUS lending and guarantee authority for “efficiency and conservation programs” and renewable energy systems (both on and off-grid). RUS should give eligible borrowers the opportunity to borrow funds exclusively for efficiency improvements by fast tracking regulations to permit the use of the RUS loan program for efficiency loans in FY 2010 and future years.
Limitations	The available coverage for loan guarantees is fully subscribed for renewable energy, distribution, transmission, peaking generation and pollution controls. In addition, RUS’ ability to make direct loans under 7 U.S.C. § 935 is limited by the statutory requirement that these loans bear interest rates of either 5% (where “hardship” criteria are met) or rates reflecting municipal borrowing costs. These rates may not be low enough to be attractive to rural utilities interested in extending their energy efficiency programs. Similarly, loan guarantees provided under 7 U.S.C.

³⁸ Pub.L. No. 111-80 at 23.

³⁹ 7 U.S.C. § 902(a).

⁴⁰ 7 U.S.C. § 935(c)(1)-(2).

§ 936 may not be attractive to electric utilities if the guarantee does not induce lenders to lower interest rates by a sufficient amount.

J. SECTION 114 DATA COLLECTION Use Clean Air Act Information-Gathering Authority to Obtain Energy and Water Use Information From Utilities	
Agency	Environmental Protection Agency
Program	Clean Air Act Section 114 (Information-Gathering Authority)
Authority	42 U.S.C. § 7414
Description	<p>Section 114 of the Clean Air Act (CAA) broadly empowers EPA to require companies and individuals to undertake a variety of data collection, record-keeping, and reporting activities. In order to use this authority, EPA must need the data to develop emissions standards under the CAA, or otherwise carry out “any provision” of the CAA (including, for example, the agency’s air pollution research and development programs administered under Section 103 of the Act).⁴¹ If this criterion is met, EPA may issue information-gathering regulations directed at:</p> <ul style="list-style-type: none"> • Any person who owns or operates any emission source; • Any person who manufactures emission control equipment or process equipment; • Any person who the Administrator believes may have information necessary for the purposes described above; or • Any person who is subject to any requirement of the CAA (with an exception for engine manufacturers subject to EPA emission rules under Title II of the CAA).⁴² <p>Under Section 114, EPA is specifically authorized to require the maintenance of records, installation of monitoring equipment, sampling of emissions, filing of reports, recording of production variables or operating parameters, and the provision of “such other information as the Administrator [of EPA] may reasonably require.”⁴³</p> <p>In 2009, EPA undertook a significant exercise of its Section 114 authority by promulgating a regulation requiring the monitoring and reporting of GHG emissions by major sources in a variety of economic sectors. EPA considered requiring individuals subject to the rule to report electricity purchases and indirect emissions resulting from electricity use, but ultimately declined to do so.⁴⁴ However, the agency said that “acquiring such data may be important in the future” and would</p>

⁴¹ 42 U.S.C. § 7414(a)(i), (iii).

⁴² 42 U.S.C. § 7414(a)(1).

⁴³ *Id.*

⁴⁴ Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56,260, 56,288 (Oct. 30, 2009).

	<p>help develop EPA’s renewable energy and energy efficiency programs, including ENERGY STAR and Climate Leaders.⁴⁵</p>
Actions	<p>EPA should use its Section 114 authority to collect building-level electricity and gas usage data from local distribution companies, and use that data to refine the agency’s Portfolio Manager tool for benchmarking building energy performance under the ENERGY STAR program. This authority could be exercised in the form of a supplement to the agency’s greenhouse gas reporting rule, or as a stand-alone regulation. In either case, such a requirement could be justified under Section 114 as an aid to EPA’s research and development programs, as well as ENERGY STAR (whose original statutory authority was Section 103 of the CAA until the enactment of the Energy Policy Act of 2005).</p> <p>In addition, EPA may consider using Section 114 authority to gather building-level water consumption information from local water authorities. Like electricity and gas use, water consumption data would be useful to EPA’s research and development programs under Section 103 of the CAA, as well as ENERGY STAR, because the purification, distribution, heating, and post-usage treatment of water all require significant quantities of energy. Data on building-specific water consumption and water conservation efforts would assist in the development and refinement of GHG profiles for water usage, and improve EPA’s understanding of water conservation as an energy efficiency and GHG abatement strategy.</p>
Known limitations	<p>As noted above, EPA can only use its Section 114 authority if the information being gathered is needed for the administration of the agency’s duties under the CAA. Although there is a clear link between water usage and greenhouse gas emissions, EPA would need to explicitly establish this link in exercising its Section 114 authority to gather water usage information.</p> <p>In addition, information collection of the type described above would be most useful if combined with data on building characteristics. Collecting such data could raise privacy issues that would need to be addressed.</p>

⁴⁵ *Id.* at 56,289.

K. DEFENSE INSTALLATIONS ENERGY MONITORING Adopt Energy and Utility Monitoring and Control System for DOD Facilities	
Agency	Department of Defense
Program	Energy Monitoring and Utility Control System Specification
Authority	10 U.S.C. § 2867
Description	<p>The National Defense Authorization Act of 2010 required DOD to adopt an energy and utility monitoring control system specification for use throughout DOD (including military construction and military housing projects) for the purpose of monitoring and controlling:</p> <ul style="list-style-type: none"> • Indoor environments; • HVAC components; • Central plant equipment; • Renewable energy generation systems; • Lighting; and • Power distribution networks <p>The statutory goal of this measure is to establish installation-wide energy monitoring and utility control systems.</p>
Action	<p>DOD is required to submit a report to Congress by the end of April 2010 containing, among other things:</p> <ul style="list-style-type: none"> • Contract specifications to implement the installation wide control system specification; • A plan and expected timetable for integration of the standard with monitoring and control systems; and • Methods to ensure compliance with DOD information assurance certification and accreditation process.

IV. OPPORTUNITIES TO ENHANCE THE USE OF EXISTING AUTHORITIES IN THE MULTIFAMILY RESIDENTIAL BUILDINGS SECTOR

A. FANNIE MAE AND FREDDIE MAC Encourage the Federal Housing Enterprises to Develop Products for Green Multifamily Buildings, and Adopt Appropriate Underwriting Standards for Buildings With Green Features	
Agency	Federal Housing Finance Agency (FHFA) Fannie Mae Freddie Mac
Program	-
Authority	12 U.S.C. § 4501 et seq. 12 U.S.C. § 1716 et seq. (Fannie Mae Charter) 12 U.S.C. § 1451 et seq. (Freddie Mac Charter)
Funding	Fannie Mae: \$752 billion in new business acquisitions from January to November 2009 ⁴⁶ Freddie Mac: \$548 billion in new purchases and issuances in 2009 ⁴⁷
Description	<p>Amidst the collapse of the housing market in mid-2008, the federal government assumed control of Fannie Mae and Freddie Mac (the “Enterprises”) and, pursuant to the Housing and Economic Recovery Act of 2008,⁴⁸ placed both Enterprises under the supervision of the new Federal Housing Finance Agency (FHFA). The Enterprises continue to carry out their core functions of purchasing residential mortgages and home loans in the secondary markets, with an overall mission of achieving housing goals prescribed by FHFA. In addition to establishing housing goals, FHFA has responsibility for approving all new financing products of the Enterprises, and receiving and publicizing mortgage data provided by the Enterprises.⁴⁹</p> <p>FHFA’s discretion to set housing goals for the multifamily market is very limited, and does not appear to present opportunities for specifying energy efficiency or sustainability targets as housing goals.⁵⁰</p> <p>However, the acts establishing the Enterprises specifically authorize both</p>

⁴⁶ Fannie Mae Monthly Summary November 2009, <http://www.fanniemae.com/ir/pdf/monthly/2009/113009.pdf>

⁴⁷ Freddie Mac Monthly Volume Summary December 2009, <http://www.freddiemac.com/investors/volsum/pdf/1209mvs.pdf>

⁴⁸ § 1101, Pub.L. No. 110-289

⁴⁹ 12 U.S.C. §§ 4541, 4543.

⁵⁰ See 12 U.S.C. § 4563.

	<p>entities to create liquid markets for loans for home energy efficiency and renewable energy improvements. For example, Section 302 of Fannie Mae’s charter⁵¹ authorizes the corporation to purchase loans for home improvements, specifically including energy conservation measures or solar energy systems as described in section 2(a) of the National Housing Act and 210(11) of the National Energy Conservation Policy Act.⁵² Such loans do not need to be secured by a lien against the property, providing additional flexibility for these transactions. Similarly, Freddie Mac’s organic act includes unsecured loans for energy efficiency and renewable energy improvements among the classes of “residential mortgages” within its portfolio.⁵³</p> <p>The Enterprises also exercise considerable influence over the nationwide mortgage industry by prescribing underwriting guidelines (including appraisal standards) for sellers and servicers of multifamily mortgages. This creates an opportunity to encourage proper valuation of energy efficiency and green building improvements, which many lenders may overlook.</p>
<p>Actions</p>	<ol style="list-style-type: none"> 1. As noted above, the Enterprises are specifically authorized to participate in the secondary market for mortgage loans (and even unsecured loans) for which proceeds have been used for residential energy efficiency improvements. More generally, the Enterprises are not prevented by FHFA or by their founding charters from creating special programs to purchase mortgages for properties meeting minimum energy efficiency, water efficiency, and broader sustainability criteria. Indeed, Freddie Mac recently announced a \$1 billion partnership with Community Preservation Corporation to finance energy efficient upgrades and retrofits in multifamily properties.⁵⁴ FHFA should encourage the Enterprises to launch other similar initiatives, and require the Enterprises to provide detailed reporting of their efforts in this regard and the long-term financial performance of such mortgages. 2. Pursuant to their general authority to establish appropriate standards for conforming mortgages,⁵⁵ the Enterprises have ample discretion to establish underwriting guidelines that provide detailed instructions for appraising and financing multifamily residences with energy efficiency, renewable energy, or sustainability features. Such guidelines could help

⁵¹ 12 U.S.C. § 1717(b)(3).

⁵² 12 U.S.C. § 1703(a) and 42 U.S.C. § 8211(11), respectively.

⁵³ 12 U.S.C. § 1451(h)(2).

⁵⁴ Jerry Ascierio, “Freddie Mac Working on Green Rehab Mortgage,” Multifamily Executive (Dec. 10, 2009), available at <http://www.multifamilyexecutive.com/green-building/freddie-mac-working-on-green-rehab-mortgage.aspx>.

⁵⁵ 12 U.S.C. § 1454(a)(1) (Freddie Mac); 12 U.S.C. § 1719(a)(1).

	<p>avoid disincentives for energy efficiency and sustainability improvements by ensuring that these residential features are properly valued. In its capacity as overseer of the Enterprises, FHFA should also encourage the development and use of such guidelines.⁵⁶</p> <p>3. FHFA and the Enterprises should help contribute to the development of comprehensive and detailed market data on energy efficient and sustainable buildings, by requiring that mortgages sold to the Enterprises include full disclosure of energy efficient and sustainable features. The Enterprises should make those disclosures available to the public so that they can be accessed by appraisers, lenders, consumers, and realtors, and potentially incorporated into the major real estate listing services.</p>
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⁵⁶ One practical way to implement these measures would be for the Enterprises to revise the Uniform Residential Appraisal Report form to include space for an energy efficiency report and, similarly, include some measure of energy efficiency savings (even if based on default assumptions) in the Automated Underwriting Software maintained by the Enterprises.

B. GOVERNMENT NATIONAL MORTGAGE ASSOCIATION Encourage Ginnie Mae to “Green” Its Mortgage Guarantee Activities	
Agency	Department of Housing and Urban Development (HUD)
Program	Government National Mortgage Association (Ginnie Mae)
Authority	12 U.S.C. § 1716 et seq. (Ginnie Mae Charter)
Funding	Volume of mortgage-backed securities (MBS) guaranteed in FY 2009: \$418.9 billion ⁵⁷
Description	<p>Unlike Fannie Mae and Freddie Mac, which had been nominally privatized until 2008, Ginnie Mae has remained a wholly-owned government corporation under the supervision of HUD since its inception in 1968. Ginnie Mae’s core market function is to issue government guarantees for Ginnie Mae-approved mortgage-backed securities (MBS) that are based on federally-insured mortgages (including mortgages insured by the Federal Housing Administration, the Rural Housing Service, and the Department of Veterans Affairs). Ginnie Mae does not directly purchase or sell mortgages in the secondary markets as the Enterprises do.</p> <p>In exercising its authority to guarantee MBS, Ginnie Mae has considerable discretion to determine which financial institutions are qualified to issue Ginnie Mae-guaranteed MBS. Ginnie Mae is also authorized to set “reasonable” fees for its guarantees, but it may not charge a fee in excess of what is actuarially required to pay expected claims.⁵⁸ In recent years, Ginnie Mae has developed guarantees for a variety of MBS products that reflect different risk profiles and appeal to different classes of investors. Although most Ginnie Mae-guaranteed MBS include single-family mortgages, almost all FHA-insured multifamily loans are ultimately packaged into MBS that are guaranteed by Ginnie Mae.⁵⁹</p>
Actions	<p>Like the Enterprises, Ginnie Mae has the authority to establish special programs or products that recognize the unique value proposition of energy efficient and sustainable multifamily buildings. Ginnie Mae should:</p> <ul style="list-style-type: none"> • Collect and analyze data on the financial performance of mortgages secured by energy efficient and sustainable properties; • Reform policies and procedures for evaluating mortgage risk to take account of this data and analysis, and to ensure that energy

⁵⁷ Government National Mortgage Association, *2009 Ginnie Mae Annual Report* at 5 (2009).

⁵⁸ 12 U.S.C. § 1721(g)(3)(B).

⁵⁹ Ginnie Mae Annual Report at 19.

	<p>efficient and sustainable building features are properly valued when issuing MBS guarantees;</p> <ul style="list-style-type: none">• Develop MBS products that specifically include a certain proportion of mortgages secured by energy efficient and sustainable properties, or that contain only such mortgages; and• Develop pricing models for guarantees on these MBS that appropriately reflect the enhanced value of energy efficient and sustainable properties. <p>Where possible, Ginnie Mae should publicly share the results of any efforts to develop MBS products and guarantee pricing models that are appropriate for energy efficient and sustainable properties. This would enable the broader financial community to learn from, emulate, and possibly improve upon Ginnie Mae's own efforts.</p>
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C. FHA INSURANCE FOR MULTIFAMILY HOUSING Strengthen Standards Applicable to FHA-Insured Properties, and Encourage the Use of FHA Insured Loans to Finance Energy Efficiency and Sustainability Improvements	
Agency:	Federal Housing Administration (FHA)
Program:	Mortgage and Supplemental Loan Insurance for Multifamily Dwellings (Sections 221 and 241 of the National Housing Act)
Authority:	12 U.S.C. § 1715l (Section 221) 12 U.S.C. § 1715k (Section 220) 12 U.S.C. § 1715z-6 (Section 241)
Description:	<p><i>1. Section 241(d) and (e).</i> Section 241 of the National Housing Act authorizes FHA to insure supplemental loans for multifamily residential properties, in order to finance improvements on those properties. A key advantage of Section 241 loan authority is that – unlike most FHA insurance programs – the loan need not be secured by a first mortgage on the property.</p> <p>Under Section 241, HUD has discretion to choose the repayment terms and the form of security for the loan.⁶⁰ Although Section 241(a) generally restricts such loans to properties that are already insured by FHA, Section 241(d) and (e) provide HUD with separate and broader authority to provide supplemental loan insurance for properties that are <i>not</i> covered by FHA insurance.⁶¹ Section 241(d) allows HUD to do so where HUD finds that the supplemental loan would “preserve, expand, or improve housing opportunities” (the loan is still subject to the overall debt limit for FHA mortgages). Section 241(e) allows HUD to insure supplemental loans for solar energy systems or energy conserving improvements, without regard to whether the property is insured by FHA; although 241(e) loans are not restricted solely to affordable housing projects, Section 241(e)(4) permits HUD to attach conditions concerning “rents or sales, charges, capital structure, rate of return, and methods of operations” in order to ensure “reasonable rentals to tenants and a reasonable return on the investment.”</p> <p><i>2. Section 221.</i> Section 221 of the National Housing Act authorizes HUD (through the FHA) to insure mortgages for new construction and rehabilitation of multifamily dwellings for moderate-income residents, the</p>

⁶⁰ 12 U.S.C. § 1715z-6(b)(4) (stating that Section 241 loans may “be secured in such manner as the Secretary may require.”).

⁶¹ In researching this memorandum, the authors encountered a divergence of opinion as to whether the Section 241 regulations at 24 C.F.R. § 241 contemplate or authorize supplemental financing for non-FHA insured properties. Although Subpart D of the Section 241 regulations appears to provide terms and conditions for such financing, HUD may need to clarify

	<p>elderly, and the handicapped. The insurance may be conditioned on such regulations regarding “rents, charges, and methods of operation” as HUD determines will “effectuate the purpose of this section.”⁶² With the exception of interest rates, HUD also has considerable discretion to set the financial terms of mortgages insured under this section.⁶³</p> <p>In addition, HUD may establish “such standards and conditions as the Secretary may prescribe to establish the acceptability of such property for mortgage insurance,” including, for example, standards for commercial and community facilities included in these projects.⁶⁴ Note that 42 U.S.C. § 12709(a), enacted as part of EISA 2007, requires HUD to set energy efficiency standards for newly constructed FHA-insured properties (<i>not</i> rehabilitated properties) that are at least as stringent as IECC or ASHRAE standards (To our knowledge, HUD has not required FHA-insured properties to exceed those model standards).</p> <p>Where a project includes cost-effective solar energy systems or energy conservation measures, FHA may increase the amount of the mortgage to be insured by up to 20% to account for the cost of the improvements.⁶⁵</p> <p>3. <i>Section 220.</i> Section 220 of the National Housing Act permits HUD to insure mortgages for new construction and rehabilitation of multifamily dwellings in areas of urban renewal or redevelopment. Subsection (h) of Section 220 provides additional flexibility to finance multifamily retrofits by authorizing FHA to insure unsecured loans for home improvements. Home improvement loans insured under subsection (h) may carry repayment periods of up to 20 years and may, apparently, cover the full cost of the improvements (up to a limit of \$12,000 per dwelling unit).</p>
<p>Actions:</p>	<p>1. FHA’s authority to insure loans under Section 241 is a little-known but potentially powerful tool for making low-cost capital for retrofits available to multifamily building owners. FHA should raise the profile of the Section 241 program – including among lenders – as a vehicle for affordable financing of energy efficiency and sustainability improvements, by: adding Section 241 loans to its Multifamily Accelerated Processing (MAP) program and associated MAP documentation; revising and updating its existing Handbook 4585.1 to</p>

⁶² 12 U.S.C. § 1715l(d)(3).

⁶³ 12 U.S.C. § 1715l(d)(5).

⁶⁴ 12 U.S.C. § 1715l(f).

⁶⁵ 12 U.S.C. § 1715l(k).

	<p>include energy conservation loans; and expanding its Section 241 regulations to address loans that are junior to FHA insured mortgages.⁶⁶</p> <p>As part of this process, FHA should ensure that the terms of insurance offered under Section 241 are tailored to the particular needs of energy efficiency and sustainability projects. If possible, FHA should offer more attractive insurance terms to projects that go beyond minimum energy efficiency standards and/or incorporate specified green building features.</p> <p>2. FHA should similarly raise the profile of Section 220, 220(h), and 221 insurance products as vehicles for financing energy efficiency and sustainability improvements, by advertising these programs to developers, project owners, and lenders. FHA should also ensure that the terms of insurance offered under both programs are tailored to the particular needs of energy efficiency and sustainability projects. If possible, FHA should offer more attractive insurance terms to projects that go beyond minimum energy efficiency standards, incorporate specified green building features, or provide secure innovative financing arrangements (such as repayments made in the form of an assessment on property taxes, as provided under property-assessed clean energy (PACE) bonds).</p> <p>3. HUD should exercise its authority under 42 U.S.C. § 12709(a), as well as its general authority under Section 221(f) and 220(d)(1)(B) to set “standards and conditions” for properties receiving insurance under Sections 220 and 221, to require improvements in energy efficiency beyond what is required by IECC and ASHRAE standards, and to require the integration of sustainable design principles. The Core Performance design guide issued by the New Buildings Institute would be an appropriate basis for the energy efficiency provisions of such standards.</p>
<p>Known limitations</p>	<p>Section 241 insurance has not been widely used in the past, in part because most property owners in a position to take advantage of the program have found it easier and less costly to procure a loan for improvements as part of a mortgage refinancing. However, given the troubles affecting the market for mortgage refinancing, and the related collapse of equity affecting many properties, Section 241 may have renewed relevance. HUD should strive to ensure that Section 241 financing procedures are as clear and straightforward as possible, and</p>

⁶⁶ In researching this memorandum, the authors encountered a divergence of opinion as to whether the Section 241 regulations at 24 C.F.R. § 241 contemplate or authorize supplemental financing for non-FHA insured properties. Although Subpart D of the Section 241 regulations appears to provide terms and conditions for such financing, the regulations could be clearer. HUD should consider revising its regulations to ensure that they clearly reflect the full scope of financing contemplated by the statute, including supplemental loans for non-FHA insured properties.

	<p>should do what it can to raise awareness of the program among lenders and potential borrowers.</p> <p>Section 241(e) limits the amount of insurance for energy efficiency and solar energy systems to 90% of the value of the supplemental loan.</p> <p>Section 221 only permits FHA to insure <i>first</i> mortgages, not subordinated or unsecured debt. As a result, Section 221 is most useful for the promotion of energy efficiency and sustainability improvements in new construction or in rehabilitations undertaken together with refinancing (where the cost of the improvements could be folded into a new first mortgage on the property). Because Section 241 is not so restricted, it is a more flexible source of authority for energy efficiency and sustainability enhancements.</p>
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D. SECTION 8 PROJECT-BASED ASSISTANCE
Remove Barriers and Disincentives to Financing Energy Efficiency and Sustainability Improvements in Section 8 Housing, and Provide Monetary Incentives for Such Improvements Where Feasible

Agency:	Department of Housing and Urban Development
Program	Section 8 Project-Based Assistance
Authority:	42 U.S.C. § 1437f
Funding:	FY 2010 Appropriations: \$8.3 billion ⁶⁷
Description:	Under Section 8(b) of the Housing Act of 1937, HUD provides subsidies to owners of affordable housing projects in an amount that is supposed to cover the difference between fair market rental and a statutorily determined contribution by low-income tenants.
Action:	<p>1. Affordable housing advocates have noted that the use of outdated or regional data for utility allowances acts as a disincentive for multifamily housing owners to invest in energy efficiency measures.⁶⁸ The method for establishing utility allowances is left to HUD regulation (now codified at 24 C.F.R. Part 5) and there is no statutory obstacle to allowing unit-specific utility allowance calculations that take into account energy efficiency investments and time-of-use information. If data to support unit-specific allowances is not available, HUD should consider allowing reasonable standardized adjustments to utility allowances, depending on the type of efficiency measures implemented. HUD should also consider developing regional, regularly updated time-of-use rates for use in determining more accurate utility allowances. Note that the Internal Revenue Service has produced helpful guidance for computing unit-specific utility allowances, which would be considered as a reference for HUD’s own programs (see note 68).</p> <p>2. Although Section 8 limits the rent that a project owner may charge to a “fair market” level (comparable to similar properties), HUD is given explicit authority in 42 U.S.C. § 1437(c)(1)(A) to allow a project owner a premium of up to 20% over fair market rents if “special circumstances warrant.” HUD should recognize the benefits of energy efficiency and sustainable design by authorizing higher than fair market rents for</p>

⁶⁷ Pub.L. No. 111-117, at 54.

⁶⁸ Enterprise, *Bringing Home the Benefits of Energy Efficiency to Low-Income Households* 14-15 (2008). Note that reformed utility allowance calculation procedures have already been promulgated by the Internal Revenue Service, allowing Low Income Housing Tax Credit (LIHTC) property owners to use a HUD utility model or a certified engineering study to compute property-specific utility allowances. See Section 42 Utility Allowance Regulations Update, 73 Fed. Reg. 43,863 (July 29, 2008). This new method allows property developers to capture the financial benefits of energy efficiency improvements, and could be adapted to other HUD and USDA housing programs that incorporate utility allowances.

deserving properties (preferably on a sliding scale depending on the level of efficiency or green building certification achieved), subject to this 20% limit. Alternatively, HUD could revise its regulations governing the calculation of “fair market rental” to reflect the expected savings on a tenant’s utility bill resulting from energy efficiency investments.

As a third option, HUD could revise its regulations limiting the amount of distributions to project owners, so as to reward private project owners (and especially nonprofits) for additional equity investments in energy efficiency and green building improvements. Current HUD regulations limit distributions to 10% on *initial* equity for for-profit owners, and provide no distribution at all to nonprofit owners of Section 8 housing.⁶⁹

Note that these options would not increase the amount that low-income tenants are expected to pay towards rent; these options would, however, increase the amount of federal Section 8 assistance flowing to energy efficient and sustainable properties.

3. As with Section 202 and 811 properties, HUD should ensure that contracts for Section 8 project-based assistance do not limit the ability of project owners to extend easements or covenants for renewable energy systems, or to take on reasonable levels of subordinated mortgage debt for cost-effective energy efficiency and sustainability improvements. In particular, HUD should amend the terms and conditions of its Section 8 contracts to permit streamlined approval of such investments where it is financially prudent to do so. This step would enable Section 8 property owners to access needed capital for improvements, as well as participate in innovative financing programs like property-assessed clean energy bonds (PACE), leased renewable energy equipment, and energy performance contracting.

4. Housing advocates have also noted that many Section 8-assisted properties maintain significant funds in required reserve accounts dedicated to emergency replacements and repairs, or residual receipts that are remitted to the owner or HUD when the Section 8 assistance contract expires.⁷⁰ Although there are no obstacles in Section 8 itself to the use of these funds for energy efficiency or other green building improvements, HUD regulations and policy manuals severely restrict the use of residual

⁶⁹ See Center for American Progress, *Green Affordable Housing: Within Our Reach* 11-12 (2008).

⁷⁰ See Center for American Progress at 12-13 (noting a 2000 HUD audit that determined approximately \$500 million resides in idle Residual Receipts accounts).

	<p>receipts accounts for Section 8 contracts begun after 1979 (which now includes all Section 8 contracts).⁷¹ HUD should revise 24 C.F.R. Parts 880 and 881, and HUD Handbook 4350.1, to permit post-1979 housing developments to withdraw funds from Residual Receipts for qualifying energy efficiency, water efficiency, and sustainability improvements. Apparently, Section 8 contracts renewed using Recovery Act funds included a provision to permit the use of Residual Receipts for these purposes, on a trial basis. HUD should build on its experience with that initial trial to introduce more flexible use of Residual Receipts on all Section 8 contracts.</p> <p>In addition, HUD should consider allowing Section 8 projects to draw down Reserves for Replacements below the otherwise applicable minimum balance (perhaps with a long-term repayment requirement), if the proceeds are used for cost-effective improvements. As a condition of using these funds, HUD should require that properties meet reasonable minimum energy and water saving improvement targets.</p>
<p>Known limitations</p>	<p>Appropriations for Section 8 housing assistance are severely limited relative to housing need. Any recommendation that involves a net increase in rental payments to certain Section 8 property owners would place additional pressure on the portfolio. HUD may need to carry out more research to ensure that any “premium” paid for green housing under Section 8 is compensated for by savings in utility expenses.</p>

⁷¹ Office of the Inspector General, Department of Housing and Urban Development, *HUD Inappropriately Authorized the Use of Residual Receipts in Lieu of Reserve for Replacement or Operating Funds 5* (2009).

E. SECTION 9 PUBLIC HOUSING FUNDS Reflect Energy Efficiency and Sustainability Efforts in Formulas for Capital and Operating Funds, and Facilitate Energy Performance Contracting by Small PHAs	
Agency:	Department of Housing and Urban Development
Program:	Section 9 (Capital and Operating Funds for Public Housing)
Authority:	42 U.S.C. § 1437g
Funding:	FY 2010 Appropriations: \$2.5 billion ⁷² (Capital Fund) and \$4.775 billion (Operating Fund) Recovery Act: \$1 billion in capital funds
Description:	<p>Section 9 of the Housing Act of 1937 established separate Capital and Operating Funds for local public housing authorities (PHAs), which are allocated among PHAs according to HUD-determined formulas whose general requirements are described in Sections 9(d)(2) and (e)(2). Both provisions give HUD ample discretion to take into account energy efficiency and sustainability factors in distributing funds to PHAs.</p> <p>For example, in allocating capital funds HUD is explicitly authorized to consider “characteristics and locations” of projects owned by each PHA, “projected future needs” of each PHA, cost of construction and rehabilitation, “any other factors that the Secretary determines to be appropriate,” and a “mechanism to reward performance.”⁷³ In addition, the statute further clarifies that monies from the Capital Fund may be used for improvement of energy and water efficiency by “such . . . means as the Secretary determines are appropriate” and for “integrated utility management and capital planning to maximize energy conservation and efficiency measures.”⁷⁴</p> <p>With respect to the allocation of operating funds, HUD is permitted to take into account “any . . . factors that the Secretary determines to be appropriate,” and is instructed to disburse funds for energy costs “with an emphasis on energy conservation.”⁷⁵ In addition, the statute provides that the operating costs formula <i>must</i> allow PHAs to receive “full financial benefit from any reduction in the cost of utilities or waste management” resulting from an energy performance contract.⁷⁶</p> <p>PHAs that receive Section 9 funds must comply with minimum design and construction standards specified at 24 C.F.R. Part 941.203, including</p>

⁷² Pub.L. No. 111-117, at 46.

⁷³ 42 U.S.C. § 1437g(d)(2), (d)(2)(F).

⁷⁴ 42 U.S.C. § 1437g(d)(1)

⁷⁵ 42 U.S.C. § 1437g(d)(1)(L), (d)(2).

⁷⁶ 42 U.S.C. § 1437g(d)(2)(C)(i).

	conformity with a national building code and with the HUD minimum property standards located at 24 C.F.R. Part 200, Subpart S.
Action:	<p>1. Although the statute requires that the formula for Operating Funds allow PHAs to retain the “full financial benefit” of reductions in utility expenses brought about by an energy performance contract,⁷⁷ HUD also has flexibility to ensure that PHAs are not penalized for investments made outside the context of such a contract. HUD should revise its allocation formula for Operating Funds to ensure that PHAs are held harmless for reductions in operating expenses that are achieved when a PHA uses capital funds (or other innovative financing mechanisms, such as property assessed clean energy bonds) to invest in energy efficiency improvements. These savings could be retained by PHAs to use for other purposes permitted by statute.</p> <p>2. HUD should act to facilitate the use of energy performance contracts by small PHAs. Currently, small PHAs often lack the scale or technical capacity required to execute a contract with an energy services company (ESCO).⁷⁸ Groups of small PHAs have, in rare cases, overcome this problem by aggregating their potential energy savings through a joint contract with an ESCO. HUD could facilitate more such arrangements by acting as a mediator between small PHAs and ESCOs, by facilitating contact and communication between small PHAs that are good candidates for aggregated ESCO agreements, and by helping devise standard agreements that are well-tailored to the needs of small PHAs.⁷⁹ HUD should also explore the potential for extending such an aggregation model to PACE bonds or other innovative financing arrangements.</p> <p>3. HUD should consider revising the minimum quality standards for new and rehabilitated Section 9-assisted public housing to reflect strong energy efficiency and sustainability criteria. With regards to energy efficiency, an appropriate basis for such standards would be the “Core Performance” guide from the New Buildings Institute.</p> <p>In 2009, HUD included compliance with Enterprise Green Communities</p>

⁷⁷ 42 U.S.C. § 1437g(e)(2)(C). 24 C.F.R. Part 990.185 makes clear that the Operating Fund incentives for energy conservation are only available to PHAs that enter into contracts financed by a third party and repaid through energy savings.

⁷⁸ Center for American Progress, at 17-18; *see also* Oak Ridge National Laboratory, *Energy Performance Contracting for Public and Indian Housing* 25 (1992) (noting that annual utility costs of \$200,000 to \$500,000 (in 1992 dollars) are normally required to attract ESCO interest in a PHA request for proposals).

⁷⁹ HUD is in the midst of developing a standardized energy performance contract, called the “EZ EPC,” that would help reduce the costs to PHAs of negotiating a regimen of specific energy efficiency upgrades with an ESCO. It may be possible to utilize the EZ EPC as the basis for a standard agreement for aggregation.

	<p>criteria (and other similar rating criteria) as a requirement for a portion of Section 9 competitive grant funding appropriated by the Recovery Act.⁸⁰ The grants were heavily oversubscribed, suggesting that there is room to strengthen standards without harming the competitiveness of the program.</p> <p>4. If Congress adequately funds the Capital Fund in future fiscal years, HUD should consider revising its allocation formula for Capital Funds to reward PHAs that include strong energy efficiency and sustainability measures in their future capital improvement plans. This would require the addition of new elements to the allocation formula, since the current formula allocates half of capital funds on the basis of “accrual” needs (essentially, ongoing repair and replacement beyond ordinary maintenance) and the other half on the basis of existing property characteristics (not capital improvement plans). A revised formula could include a performance-based rating that would vary according to the aggressiveness of the energy efficiency and sustainability measures proposed in capital improvement plans. As discussed in “Known limitations” below, however, this recommendation would not be practical or desirable at current funding levels, which are barely adequate to keep up with ongoing repair and replacement needs (referred to as “capital accrual”).</p>
<p>Known limitations</p>	<p>Due to chronic underfunding, the unmet capital needs of PHAs around the country have continued to grow over time. The estimated modernization backlog for PHAs grew from over \$20 billion in 2000⁸¹ to \$30 billion in 2009 – on top of annual accrual requirements of approximately \$3 billion. These needs far exceed the resources in HUD’s Capital Fund, which is barely adequate to cover accrual needs, much less significant modernization activity. At such meager funding levels, a change in the Capital Funds allocation formula could deprive some PHAs of much-needed modernization funds. There is, however, much HUD can do to ensure that the modernization projects that do receive funding also improve the energy efficiency and sustainability of public housing.</p>

⁸⁰ See HUD, Fiscal Year 2009 Notice of Funding Availability for the Capital Fund Recovery Competition Grants, Docket No. FR-5311-N-02 (June 3, 2009). http://portal.hud.gov/portal/page/portal/RECOVERY/programs/PHA_RESOURCES/5311-N-01_PH_Cap_Fund_Rec_Com_Final_revised_pdf.pdf.

⁸¹ See, e.g., ABT Associates, *Capital Needs of the Public Housing Stock in 1998* (Executive Summary), at 2 (Jan. 2000), available at <http://www.abtassociates.com/reports/ES-20008744720691.pdf>.

F. PUBLIC HOUSING DEBT FINANCING Encourage the Use of Public Housing Debt Finance Mechanisms for Energy Efficiency and Sustainability Improvements	
Agency	Department of Housing and Urban Development
Program	Public Housing Mortgage Program Capital Fund Financing Program Operating Fund Financing Program
Authority	42 U.S.C. § 1437z-2, 42 U.S.C. § 1437g
Description	<p>These three programs all allow PHAs to take on additional debt for development and modernization activities, potentially including energy efficiency and green building retrofits. In the case of the Public Housing Mortgage Program (PHMP), the debt is secured by a conventional mortgage on the property or a security interest in personal property of the PHA. HUD has issued a proposed Notice on the PHMP, on which the agency took comments through January 31, 2010.⁸² The PHMP Notice essentially formalizes HUD’s prior practice of handling PHMP requests on a case-by-case basis.</p> <p>In contrast to the PHMP, the Capital Fund and Operating Fund Financing Programs (CFFP and OFFP, respectively) allow a PHA to obtain loans secured by an interest in anticipated distributions from HUD’s Capital and Operating Funds. According to the preamble to a proposed rule governing the two programs, which was never finalized, the CFFP even allows HUD to make direct debt service payments to lenders⁸³ – thus reducing the risk that PHAs would default on payments promised from their Capital Funds.</p>
Action	<ol style="list-style-type: none"> 1. HUD should finalize its proposed rules governing the PHMP, the CFFP, and the OFFP to provide PHAs with greater certainty as to the circumstances under which financing proposals for energy efficiency and sustainability improvements will be approved by the department. In addition, HUD should encourage PHAs to consider using these programs to finance energy efficiency and sustainability improvements in public housing. HUD should also issue guidance to its staff illustrating acceptable ways in which these financing programs can be used to provide the needed capital for energy efficiency and sustainability improvements. 2. In undertaking case-by-case review of PHMP, CFFP, and OFFP

⁸² <http://www.hud.gov/utilities/intercept.cfm?/offices/pih/programs/ph/capfund/prop-phmp-notice.pdf>

⁸³ Use of Public Housing Capital and Operating Funds for Financing Activities, 72 Fed. Reg. 39,546, 39,547 (July 18, 2007).

	<p>proposals, HUD should ensure that the impact of energy efficiency and green building measures on utility costs and property values are properly credited in favor of the viability of the proposal.</p>
<p>Known limitations</p>	<p>PHAs may only use CFFP/OFFP/PHMP financing to supplement energy performance contract (EPC) financing. PHAs may not use CFFP/OFFP/PHMP financing to directly fund a scope of work that is part of an EPC. This limits the utility of the EPC program for smaller PHAs, which have limited capability to pursue complicated EPC financings. Statutory change would be required to enable small PHAs to utilize CFFP/OFFP/PHMP proceeds directly for work that is part of an EPC. In addition to making these programs more useful to small PHAs, this change would also significantly reduce processing time for HUD evaluation of EPCs.</p> <p>Review of financing proposals under these programs may be time-consuming and burdensome. Although HUD should engage in appropriate due diligence, the agency may consider streamlining tools such as providing expedited review for smaller projects, and providing specific timetables for completion of CFFP, OFFP, and PHMP proposals. Apparently, HUD has recently streamlined the CFFP to allow for expedited reviews for small PHAs, high performing PHAs, and PHAs that leverage their CFFP with Low Income Housing Tax Credits.</p> <p>HUD has interpreted the language of 42 U.S.C. § 1437g to prohibit direct payments from HUD’s Operating Funds to creditors under the OFFP.⁸⁴ This interpretation is intended to protect distressed PHAs from losing access to OFFP funds when they may need them to pay for utilities or payroll, and is also intended to cause lenders to look to the PHAs’ own financial and managerial capacity (rather than HUD appropriations) in evaluating the merits of an OFFP loan. These policy considerations notwithstanding, this interpretation could make OFFP proposals less attractive to lenders, who might perceive these transactions as having higher risk than would be the case if HUD could directly pay creditors from Operating Funds.</p>

⁸⁴ *Id.*

**G. LOW INCOME HOUSING TAX CREDIT
Encourage States to Adopt Best Practices
in Allocating Low Income Housing Tax Credits
on the Basis of Energy Efficiency and Sustainability Criteria**

Agency	Internal Revenue Service
Program	Low Income Housing Tax Credit
Authority	26 U.S.C. § 42
Funding	~\$2.00 per resident of each state per year ⁸⁵
Description	<p>Among the most significant federal housing subsidies, the Low Income Housing Tax Credit (LIHTC) allocates a limited number of tax credits to states each year, which are then distributed to eligible affordable housing developments according to state-developed and state-approved allocation plans.⁸⁶ The allocation plans are required to set forth selection criteria for LIHTC projects, which must include “housing needs characteristics,” “project characteristics,” and – in a new amendment enacted in the Housing and Economic Recovery Act of 2008 (HERA)⁸⁷ – the energy efficiency of the project. In addition, allocation plans must give preference to projects located in low-income census tracts and that “contribute[] to a concerted community revitalization plan.” Section 42(n) of the Internal Revenue Code authorizes the Secretary of the Treasury to make such regulations as necessary and appropriate to carry out the purposes of this section (which are not specified in the Code).</p> <p>Recently, many states have begun including various energy efficiency and sustainability factors in their allocation plans as criteria for the award of LIHTC credits. However, the coverage and stringency of these criteria vary greatly among states.⁸⁸</p>
Action	<p>1. The Treasury should issue guidance that would encourage states to include sustainability criteria (including location efficiency and access to transportation alternatives) as part of the “housing needs characteristics” and “project characteristics” elements of their allocation plans. In addition, the Treasury should provide guidance on how energy efficiency characteristics of a project should be taken into account in qualified</p>

⁸⁵ See HUD, *Updating the Low-Income Housing Tax Credit Database: Projects Placed in Service Through 2006* (2009), available at <http://www.huduser.org/portal/datasets/lihtc/report9506.pdf>. The Housing and Economic Recovery Act temporarily increased the credit to \$2.20 per resident for 2008 and 2009.

⁸⁶ 26 U.S.C. § 42(m).

⁸⁷ Section 3004(i), Housing and Economic Recovery Act of 2008, Pub. L. No. 110-289

⁸⁸ See Global Green USA, *Making Affordable Housing Truly Affordable* 13-14 (2005).

	<p>allocation plans under HERA, which required these plans to include “energy efficiency” as a selection criterion.⁸⁹ The general authority in Section 42(n) to make “necessary and appropriate” regulations for the LIHTC program should authorize such action, especially since the guidance would be nonbinding.</p> <p>2. In consultation with states, the Treasury should prepare a “model” allocation plan that reflects best practices from states that have proactively integrated energy efficiency and green building practices into their allocation plans.</p>
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⁸⁹ Housing and Economic Recovery Act of 2008 § 3004(d) (amending 26 U.S.C. § 42(m)(1)).

**H. COMMUNITY DEVELOPMENT BLOCK GRANTS
Integrate Energy Efficiency and Sustainability-Related Factors
Into State and Local Planning for Community Development Block Grants**

Agency	Department of Housing and Urban Development
Program	Community Development Block Grants
Authority	42 U.S.C. § 5301 et seq
Funding	Recovery Act: \$1 billion (\$980 million already awarded by formula) FY 2010 Appropriations: \$4 billion
Description	<p>Under the Community Development Block Grants (CDBG) program, HUD allocates flexible grants to states, metropolitan areas, and tribes according to a fixed statutory formula.⁹⁰ The grants may be used to address a variety of community development needs, consistent with statutory objectives including “elimination of slums and blight”; elimination of conditions detrimental to health, safety and public welfare; providing a “decent home and a suitable living environment for all persons”; more rational utilization of land and other natural resources; and the conservation “of the Nation’s scarce energy resources, improvement of energy efficiency, and the provision of alternative and renewable energy sources of supply.”⁹¹</p> <p>To receive CDBG funds, applicants must provide a statement of development priorities and their projected use of funds, which must (among other things) “give maximum feasible priority to activities which will benefit low- and moderate-income families or aid in the prevention or elimination of slums or blight.”⁹² Applicants must also prepare a community development plan that specifies needs and objectives in accordance with the purposes of the chapter.⁹³ These requirements have been interpreted by HUD in regulations at 24 C.F.R. Part 570. Lastly, jurisdictions are only eligible for CDBG funds upon approval of an annually updated affordable housing strategy prepared under 42 U.S.C. § 12705.⁹⁴</p>

⁹⁰ The formula is described at 42 U.S.C. § 5306 and is based strictly on demographic and economic variables.

⁹¹ 42 U.S.C. § 5301(c)

⁹² 42 U.S.C. § 5304(b).

⁹³ 42 U.S.C. § 5304(b)(4).

⁹⁴ The statute provides a lengthy list of information that states must provide in housing affordability strategies including, notably, explanations of whether incentives to improve affordable housing are affected by public policies including building codes; descriptions of significant characteristics of the local housing market; descriptions of local public housing restoration and revitalization needs and strategies for “improving the living environment” of public housing residents. HUD may disapprove a submitted strategy if it finds that the strategy is not substantially complete or is inconsistent with the purposes of the

	<p>Under the statutes, HUD must also issue regulations that provide nonbinding guidance for the evaluation and selection of projects in the following categories: (1) public or private nonprofit entities receiving funds for planning, acquisition of real property, or construction/rehabilitation of commercial or industrial properties or public facilities; (2) certain elderly housing projects; and (3) economic development projects by private for profit entities (although HUD is not allowed to condition CDBG funding on compliance with the guidelines).⁹⁵</p>
<p>Actions</p>	<ol style="list-style-type: none"> 1. HUD should provide interpretive guidance for the preparation of affordable housing strategies under 42 U.S.C. § 12705, requiring jurisdictions to describe access to affordable energy efficient and sustainable housing (including location efficient and transit-accessible housing), and provide strategies for improving availability of such housing. Such factors are well within the scope of the statutory description of affordable housing strategies, which requires jurisdictions to provide information on characteristics of the local housing market, local policies (such as building codes) that affect incentives to improve affordable housing, and strategies for improving the living environment for residents of public housing. Note that HUD’s general regulations for affordable housing strategies already include neighborhood livability and energy conservation as goals against which the strategies are evaluated.⁹⁶ Providing more specificity on how these factors are evaluated and what targets are encouraged would help these strategies become higher priorities for funding recipients. 2. As part of its mandate to provide nonbinding guidance for the evaluation and selection of CDBG-funded elderly housing projects, commercial/industrial/public facilities, and economic development projects, HUD should provide guidelines and model contract language, and recommend that recipients set targets and document success, to encourage jurisdictions to incorporate high-performance buildings, location efficiency, transit-oriented development and mixed-used development into their CDBG plans. 3. CDBG funds are unusually flexible and can be used to finance a variety of often under-funded activities related to energy efficiency and sustainability, including:

Cranston-Gonzalez National Affordable Housing Act (located at 42 U.S.C. § 12703, and which do not mention environmental, livability, or energy conservation objectives).

⁹⁵ 42 U.S.C. § 5305(b).

⁹⁶ 24 C.F.R. Part 91.1(a)(1)(ii).

- Job training and professional education for workers involved in energy auditing, sustainable design, and installation of energy efficient and sustainable building components;
- Funding energy audits and design studies to identify opportunities for cost-effective energy efficiency and sustainability retrofits; and
- Demonstrating innovative financing mechanisms for building retrofits, such as energy performance contracts and municipal loans that are secured by future property tax payments.

Although HUD cannot mandate that CDBG funds be used to support these activities, it can actively encourage states to do so and can require CDBG recipients to identify any efforts to use CDBG funds for these purposes as part of the required planning process for receiving CDBG funds.

4. HUD should consider revising its mandatory guidelines setting forth the minimum “public benefit” associated with a CDBG project⁹⁷ to include appropriate minimum energy efficiency and sustainability criteria or targets (including, as appropriate, location efficiency criteria), either on an aggregate or project-specific basis.

⁹⁷ 24 C.F.R. Part 570.209.

I. HOME INVESTMENT PARTNERSHIPS Develop Updated Guidance and Model Programs to Encourage the Use of HOME Funds for Energy Efficiency and Sustainability Projects	
Agency	Department of Housing and Urban Development
Program	HOME Investment Partnerships
Authority	42 U.S.C. § 12741 et seq
Funding	FY 2010 Appropriations: \$1.825 billion ⁹⁸
Description	<p>The HOME Investment Partnerships program provides funds to state and local jurisdictions for construction or rehabilitation of affordable housing. Participating jurisdictions have the right to decide upon the form and “terms” of assistance.⁹⁹ Eligibility to receive program funds is based solely on criteria provided in the statute,¹⁰⁰ but is also conditioned on approval of an affordable housing strategy prepared under 42 U.S.C. § 12705. Funding is distributed to eligible jurisdictions according to a HUD-developed formula that, by law, must reflect each jurisdiction’s share of the need for an increased supply of affordable housing (as measured by specified “objective measures”).¹⁰¹</p> <p>HUD has prescribed minimum quality standards for housing assisted through the HOME program, codified at 24 C.F.R. Part 92.251.</p> <p>The statute also authorizes HUD to initiate “model programs” for HOME Investment Partnerships, which local jurisdictions will have discretion to adopt, adapt to their own requirements, or decline.¹⁰²</p>
Actions	<ol style="list-style-type: none"> 1. HUD’s program guidance for the use of HOME funds to encourage energy efficiency and energy conservation dates to 1994.¹⁰³ HUD should update and strengthen this guidance document, and expand the scope of that document to include broader sustainability criteria including indoor air quality, on-site renewable energy, and sustainable materials selection. 2. Using its authority under 42 U.S.C. § 12743, HUD should develop model programs for the use of HOME funds to support energy efficient and sustainable multifamily housing, and encourage states and localities to adopt these model programs. These model programs should include,

⁹⁸ FY 2010 Appropriations Act for Transportation and HUD, Pub. L. No. 111-117 at 52.

⁹⁹ 42 U.S.C. § 12741(b).

¹⁰⁰ 42 U.S.C. § 12746.

¹⁰¹ 42 U.S.C. § 12747(b)(1)(A).

¹⁰² 42 U.S.C. § 12743.

¹⁰³ HUD-1469-CPD, <http://www.hud.gov/offices/cpd/affordablehousing/library/modelguides/1469.cfm>.

	<p>among other things, (a) training modules for local agencies administering HOME funds, affordable housing developers, and builders/contractors; (b) minimum performance criteria for energy efficiency and sustainability (including, as appropriate, location efficiency and access to transportation alternatives); and (c) recommended data collection practices and performance metrics.</p> <p>3. HUD should revise its minimum quality standards for HOME-assisted housing to strengthen energy efficiency related requirements and include sustainability criteria. An appropriate basis for these minimum standards would be the New Building Institute’s Core Performance design guide, which achieves energy savings of 20-30% over 2004 ASHRAE standards.</p>
<p>Known limitations</p>	<p>42 U.S.C. § 12711 prevents HUD from conditioning HOME funds on the adoption, continuation, or discontinuation of any public policy, regulation, or law that may be put into effect under the local jurisdiction’s authority and that is not inconsistent with federal law. Although this provision would prevent HUD from conditioning HOME funds on, for example, the amendment of building energy codes, it would not appear to pose an obstacle for the recommended HUD actions above.</p>

J. MILITARY HOUSING Extend Department of Defense Sustainable Design Criteria to Privatized Military Housing, and Apply Stringent Building Operation Standards to Defense Facilities	
Agency	Department of Defense (DOD)
Program	Military Housing Privatization Initiative DOD-owned Military Housing
Authority	10 U.S.C. §§ 2801-2815 (general military construction) 10 U.S.C. §§ 2821-2838 (military family housing) 10 U.S.C. §§ 2871-2885 (privatized housing)
Funding	FY 2010: approx. \$842 million in capital funds for trainee and family housing; \$1.44 billion in operating and maintenance funds; DOD may also reprogram up to \$3.1 billion in general construction funds for housing at its discretion.
Description	<p>DOD enjoys a general authorization to engage in military construction projects to the extent permitted by appropriations. In general, DOD appears to have latitude to establish its own specifications and standards for construction and procurement. However, Department of Defense facilities, including DOD-owned and privatized military housing, are subject to the energy efficiency and sustainable design standards that DOE is required to promulgate under EISA 2007 (see below), except that the Secretary of Defense is permitted to specify alternative (but environmentally equivalent) efficiency and design criteria exclusively for privatized military housing.¹⁰⁴</p> <p>DOD has made significant strides towards ensuring that its new facilities meet strong energy efficiency and sustainability standards. All services of the armed forces have adopted sustainability policies that set LEED Silver as the minimum energy efficiency and sustainability performance standard for new construction, where it is achievable (for projects costing less than \$750,000, the Navy and Marine Corps require “sustainable concepts, strategies and features to the fullest extent possible[.]”).¹⁰⁵ It is not clear whether these standards apply to privatized military housing.</p>
Actions	<ol style="list-style-type: none"> 1. To ensure that its facilities operate in a sustainable manner in practice, DOD should consider requiring that new and rehabilitated multifamily housing be certified to a credible operations and maintenance standard, such as LEED Existing Buildings Operations and Maintenance. 2. DOD should extend sustainable construction policies to rehabilitated

¹⁰⁴ 42 U.S.C. § 6834(a)(3)(D)(vi).

¹⁰⁵ See Department of Defense, *Unified Facilities Criteria: Sustainable Development 7-10* (UFC 4-030-01, 2007).

	<p>housing built under the Military Housing Privatization Initiative.</p> <p>3. Where possible, DOD should apply an accepted sustainable location or neighborhood design rating to DOD-owned and privatized military housing, such as LEED for Neighborhood Development or the Green Communities Criteria.</p> <p>4. DOD’s rapidly growing base of experience with green buildings puts the department in a unique position to contribute to public awareness and understanding of the performance of green buildings in practice. Accordingly, DOD should collect detailed facility-level data on energy consumption, water consumption, renewable electricity generation, occupant comfort, and other performance metrics at its new and rehabilitated buildings. Where feasible, DOD should make these data and any accompanying analyses available to its sister agencies in the federal government, and should consider public release of appropriate data. Further, DOD should seek to engage in outreach to private developers of multifamily housing and commercial buildings.</p>
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**K. SECTION 202 SUPPORTIVE HOUSING FOR THE ELDERLY
Apply Strong Energy Efficiency and Sustainability Criteria
to Section 202 Supportive Housing, and Streamline Approval
for Additional Debt Financing of Green Building Improvements
at Existing Section 202 Properties**

Agency	Department of Housing and Urban Development
Program	Section 202 Supportive Housing for the Elderly
Authority	12 U.S.C. § 1701q
Funding	FY 2010 Appropriations: \$582 million (for capital advances and project-based rental assistance), in addition to up to \$258 million that may be used for loans and project-based rental assistance ¹⁰⁶
Description	<p>Under Section 202 of the National Housing Act of 1959, HUD provides “capital advances” (grants that become repayable if the housing ceases to be used for its intended purpose) and contracts for project rental assistance to build, renovate, or rehabilitate affordable supportive housing for elderly residents. These projects must be consistent with a housing strategy approved under 42 U.S.C. § 12705 (see note 111).</p> <p>HUD has broad authority under this section to establish selection criteria for Section 202 projects, which can include any factor that HUD deems “appropriate to ensure that funds made available under this section are used effectively.”¹⁰⁷ Section 202 projects are subject to total development cost limitations (developed by HUD), appropriately adjusted for various types and sizes of housing units. These cost limitations must reflect applicable energy efficiency standards developed under 42 U.S.C. § 12709.¹⁰⁸</p> <p>In addition, HUD has developed and applies minimum housing quality standards (codified at 24 CFR § 5.703) to Section 202 projects.</p>
Action	1. HUD should revise the selection criteria for Section 202 funding to provide a competitive edge to applicants that incorporate energy efficiency and sustainability criteria into their proposed projects, beyond any minimum criteria prescribed by HUD (current procedures only award one additional “point” for the general category of “energy conservation.”). ¹⁰⁹ HUD procedures should provide a greater boost to applications that achieve more aggressive levels of energy efficiency and

¹⁰⁶ Pub. L. No. 111-117, 54-55.

¹⁰⁷ 12 U.S.C. § 1701q(f).

¹⁰⁸ 12 U.S.C. § 1701q(h).

¹⁰⁹ GAO, *Green Affordable Housing: HUD Has Made Progress in Promoting Green Building, but Expanding Efforts Could Help Reduce Energy Costs and Benefit Tenants* 5 (GAO-09-46, 2008).

	<p>sustainability performance.</p> <p>2. Frequently, the most affordable way for a multifamily housing development to implement renewable energy features (such as solar panels) is to sign a long-term lease for that equipment from a third party and provide any property easements that may be necessary for the installation of that equipment. However, 12 U.S.C. § 1701q-1 provides that sponsors of Section 202 projects subject to a mortgage may be penalized by HUD if they encumber the property in this way without seeking prior HUD approval. HUD should issue guidance, and devise a streamlined approval procedure, under which properties seeking to install cost-effective renewable energy facilities can be assured of prompt approval from HUD for the necessary encumbrances.</p> <p>3. Similarly, HUD should provide guidance approving the encumbrance of Section 202 properties with a second mortgage, where the subordinate debt is used to finance cost-effective energy efficiency or green building improvements (and does not cause the property to become so indebted as to jeopardize the government’s financial interest in the property). This step would not only facilitate access to capital for owners of Section 202 properties, it could also smooth the path toward innovative financing mechanisms such as property-assessed clean energy (PACE) bonds or energy performance contracts.</p> <p>4. HUD should ensure that the total development cost limitations on Section 202 projects are appropriate for properties that incorporate reasonable energy efficiency and green building features. In particular, HUD should “scale” these limitations to allow for significantly higher development costs for projects that achieve very high levels of energy and environmental performance.</p> <p>5. HUD should revise the minimum quality standards for Section 202 housing to reflect strong energy efficiency and sustainability criteria, with particular attention to indoor environmental quality and ventilation characteristics that are of greatest sensitivity for elderly populations. With regards to energy efficiency, the Core Performance design guide from the New Buildings Institute or a comparable guide would be an appropriate standard to use as a basis.</p>
<p>Known limitations</p>	<p>HUD has proposed eliminating capital funding for new Section 202 projects in its fiscal year 2010 budget, in order to allow HUD to restructure the Section 202 program. This restructuring period may prove an opportune time to consider incorporating the energy efficiency and sustainability elements described above into the Section 202 program. In</p>

	addition, the elimination of capital funding for <i>new</i> projects may create opportunities for HUD to use Section 202 funds for energy efficient and sustainable reinvestments or retrofits of existing projects.
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L. SECTION 811 SUPPORTIVE HOUSING FOR THE DISABLED

**Apply Strong Energy Efficiency and Sustainability Criteria
to Section 811 Housing, and Streamline Approval
for Additional Debt Financing of Green Building Improvements
at Existing Section 811 Properties**

Agency	Department of Housing and Urban Development
Program	Section 811 (Supportive Housing for Persons With Disabilities)
Authority	42 U.S.C. § 8013
Funding	FY 2010 Appropriations: \$186 million (for capital advances and project based rental assistance), in addition to up to \$258 million that may be used for project-based rental assistance. ¹¹⁰
Description	<p>Like Section 202, the Section 811 program authorizes capital advances or project-based rental assistance contracts to expand the supply of supportive housing for people with disabilities (the program also authorizes tenant-based assistance, a subsidy not provided under Section 202). The section provides HUD with broad authority to “take such actions as may be necessary” to ensure that assistance under this section is used to “meet the special needs of persons with disabilities by providing a variety of housing options” and to ensure that supportive housing provides adequately for the special needs of persons with disabilities.¹¹¹</p> <p>As with Section 202, the statute also provides HUD with discretion to establish selection criteria “determine[d] to be appropriate to ensure that funds made available . . . are used effectively” and to require applications to contain information “that the Secretary determines to be necessary or appropriate to achieve the purposes of this section.”¹¹² HUD is also directed to develop and publish cost limitations for various types and sizes of supportive housing, which must reflect the cost of structures that conform to the neighborhood and that provide for special design and features needed by disabled residents.¹¹³</p> <p>Paragraph (h)(4) of 42 U.S.C. § 8013 creates a special savings incentive that allows developers to keep 75% of capital cost savings if they install qualifying energy efficiency improvements that exceed the applicable standards promulgated under 42 U.S.C. § 12709. However, the incentive only applies if the capital cost of the project falls below the allowable</p>

¹¹⁰ Pub. L. No. 111-117, 54-55.

¹¹¹ 42 U.S.C. § 8013(c).

¹¹² 42 U.S.C. § 8013(f), (g).

¹¹³ 42 U.S.C. § 8013(h).

	<p>development costs.</p> <p>HUD’s minimum quality standards at 24 CFR § 5.703 apply to Section 811 units, just as they do to Section 202 properties.</p>
Action	<ol style="list-style-type: none"> 1. HUD should revise the selection criteria for Section 811 funding to provide a competitive edge to applicants that incorporate energy efficiency and green building criteria into their proposed projects (current procedures only award one additional “point” for the general category of “energy conservation.”).¹¹⁴ HUD procedures should provide a greater boost to applications that achieve more aggressive levels of energy efficiency and sustainability performance. 2. As with Section 202 projects, HUD should ensure that restrictions on easements, second mortgages and other encumbrances do not prevent Section 811 project owners from undertaking reasonable renewable energy, energy efficiency and sustainability improvements. HUD should issue guidance, and devise a streamlined approval procedure, under which properties making such investments could grant easements to third parties for renewable energy installations, and obtain subordinate mortgages to finance other types of improvements. 3. HUD should ensure that the development cost limitations on Section 811 projects are appropriate for properties that incorporate reasonable energy efficiency and green building features. These limitations should be “scaled” to allow higher development costs for projects that achieve very high levels of energy and environmental performance. 4. HUD should revise the minimum quality standards for Section 811 housing to reflect strong energy efficiency and sustainability criteria (including, as appropriate, location efficiency and access to transportation alternatives), especially with regards to environmental quality factors that are of greatest importance to disabled populations. With regards to energy efficiency, the Core Performance design guide from the New Buildings Institute (or another comparable guide) would be an appropriate standard to use as a basis.

¹¹⁴ GAO at 5.

M. RURAL HOUSING SERVICE PROGRAMS Apply Energy Efficiency and Sustainability Criteria to Applications for Multifamily Financing Provided by the Rural Housing Service	
Agency	U.S. Department of Agriculture (USDA)
Program	Rural Housing Service
Authority	42 U.S.C. § 1484 (Section 514 assistance for farm labor housing) 42 U.S.C. § 1485 (Section 515 assistance for low-income, elderly, and handicapped housing) 42 U.S.C. § 1490p-2 (Section 538 assistance for rural rental housing)
Funding	Section 514: \$19.7 million Section 515: \$69.5 million Section 538: \$129.1 million
Description	<p>Sections 514, 515, and 538 of the Housing Act of 1949 authorize the Department of Agriculture to insure loans for the construction of housing for farm laborers, and to provide direct and guaranteed loans for rural rental housing and housing for low-income, elderly, and handicapped residents.</p> <p>USDA is generally empowered to establish minimum standards of adequacy for residential and other buildings constructed with assistance provided through the Rural Housing Service, and is required to “promote the use of energy saving techniques through standards established by such Secretary for newly constructed residential housing assisted under this subchapter.” To the extent practicable, these standards should be consistent with energy performance requirements established by HUD for FHA-insured mortgages.¹¹⁵</p> <p>Although USDA’s ability to require conformity with its minimum standards may be limited (see below), USDA does have authority to establish selection criteria for funding awarded through Rural Housing Service programs, which must include “any objective measures of housing need, project merit, or efficient use of resources that the Secretary determines are appropriate and consistent with the statute”¹¹⁶</p>
Actions	1. USDA should include enhanced energy efficiency and sustainability features as objective criteria relating to “project merit” that will be used as a basis for selecting winning proposals for rural housing funds. The rating given to an application for RHS assistance should vary according to the level of energy efficiency and sustainability performance proposed to

¹¹⁵ 42 U.S.C. § 1479(a).

¹¹⁶ 42 U.S.C. § 1490p(a)(3).

	<p>be achieved.</p> <p>2. USDA should exercise its express authority to establish “minimum adequacy” standards for RHS-assisted housing to prescribe aggressive energy efficiency and green building criteria. As noted above, the Core Performance design guide issued by the New Buildings Institute could serve as an appropriate reference for the energy efficiency component of new minimum adequacy standards. However, USDA’s ability to enforce these criteria may be limited (see below).</p>
<p>Known limitations</p>	<p>Although 42 U.S.C. § 1479(a) appears to grant USDA broad authority to set minimum standards for USDA-assisted buildings, the statute also provides that USDA “shall” approve a residential building as meeting these standards if that building complies with “the standards contained in any of the voluntary national model building codes.” In addition, as noted above, USDA is instructed to make its energy efficiency standards consistent with HUD standards for FHA-insured mortgages. This directive appears to limit USDA’s power to require buildings to incorporate features not reflected in model building codes or HUD standards. On the other hand, USDA could clarify and interpret the term “voluntary national model building codes” to include the most recent and aggressive model codes available.</p>

N. HOPE VI / CHOICE NEIGHBORHOODS Encourage Projects Funded Through the HOPE VI / Choice Neighborhoods Program to Reflect Higher Standards of Energy Efficiency and Sustainability	
Agency:	Department of Housing and Urban Development
Program:	HOPE VI / Choice Neighborhoods
Authority:	42 U.S.C. § 1437v
Funding:	FY 2010 Appropriations: \$200 million (incl. \$65 million for Choice Neighborhoods)
Discussion:	<p>Under the HOPE VI program, HUD awards flexible grants to public housing authorities to replace obsolete or blighted public housing projects and alleviate concentrated poverty in low-income neighborhoods. Among the legislative purposes of the HOPE VI program are “building sustainable communities” and “improving the living environment for public housing residents of severely distressed public housing projects through demolition, rehabilitation, reconfiguration or replacement of obsolete projects.”¹¹⁷ HOPE VI funds may be used for design, demolition, construction, renovation, related legal and administrative services, and a variety of other activities.¹¹⁸</p> <p>States obtain HOPE VI funds by application. HUD has significant discretion to establish application criteria under the statute, which requires applications to include factors such as the capabilities and resources of the applicant, priority given to existing residents, and “such other factors as the Secretary considers appropriate.”¹¹⁹</p> <p>HUD requires housing built with HOPE VI funds to meet minimum quality standards codified at 24 C.F.R. Part 200, Subpart S. In addition, the Energy Policy Act of 2005 required HUD to establish energy efficiency standards for HOPE VI projects that meet or exceed applicable model code standards.¹²⁰</p>
Actions	HUD appears to have considerable flexibility to incorporate energy efficiency and sustainability considerations into the HOPE VI program. Such considerations are not only not prohibited by the statute, but are also fully consistent with the program’s legislative purposes of “building sustainable communities” and “improving living environments” for public

¹¹⁷ 42 U.S.C. § 1437v(a).

¹¹⁸ 42 U.S.C. § 1437v(d)(1).

¹¹⁹ 42 U.S.C. § 1437v(e)(2)(L).

¹²⁰ 42 U.S.C. § 12709(a). The statute also provides that IECC and ASHRAE energy efficiency standards (and subsequent revisions) will become automatically applicable to HOPE VI developments if HUD fails to establish its own standards.

housing residents. We recommend that HUD consider one or more of the following steps:

1. Using HUD’s explicit discretion to establish “appropriate” application criteria for HOPE VI grants, HUD should require applications for HOPE VI funding to address goals for energy efficiency and sustainability that will be advanced with federal funds, and propose specific strategies for reaching those goals. HUD could also incentivize states to be proactive in using HOPE VI funds for energy efficient and sustainable buildings (including location efficient buildings with access to transportation alternatives), by providing for “performance-based” competition in which projects that propose more aggressive energy efficiency and sustainability measures (beyond minimum standards provided by HUD) are awarded a more competitive rating.¹²¹ Such prioritization would not only yield environmental benefits, it would also help financially stressed housing developments reduce operating expenses at a time when many are facing higher than expected utility costs.

2. The statute governing the HOPE VI program requires HUD to establish cost limits for eligible activities that are “sufficient to provide for effective revitalization programs.”¹²² HUD should review its cost limits for HOPE VI projects to ensure that they are appropriate for reasonable energy efficiency and sustainability enhancements. In doing so, HUD should consider establishing different “tiers” of acceptable development costs that vary with the aggressiveness of energy efficiency and sustainability measures proposed for a project. For example, a 5 to 10% increase in development costs may be advisable for exceptionally high-performance projects, such as those obtaining a LEED Platinum rating.

3. Revise the minimum quality standards for HOPE VI projects to exceed the 2003 International Energy Conservation Code (IECC), as HUD is explicitly authorized to do under Section 153 of the Energy Policy Act of 2005. Currently, it appears that HUD applies the 2003 IECC to HOPE VI projects, which is the minimum standard of efficiency required under the law. In revising these standards, HUD should consider advanced codes and guidance, such as the Core Performance design guide from the New Buildings Institute (which achieves energy savings of 20-30% over the 2004 ASHRAE standard), or a comparable guide.

¹²¹ HUD’s FY 2009 Notice of Funding Availability for HOPE VI funds did award up to 6 additional “points” to applications that included energy efficiency and sustainability criteria such as LEED. However, it is not clear whether this level of incentive is sufficient to drive meaningful efforts to “green” HOPE VI applications.

¹²² 42 U.S.C. § 1437v(f).

	<p>4. Set aside at least a portion of the \$65 million funding for Choice Neighborhoods for green rehabilitations or new construction of affordable housing, perhaps in the form of pilot projects or competitive performance-based grants that reward aggressive energy efficiency and sustainability goals. This would be fully consistent with the language of the FY 2010 appropriations bill for Transportation and HUD, which explicitly provided that funding for Choice Neighborhoods should be used to “transform neighborhoods of poverty into functioning, <i>sustainable</i> mixed income neighborhoods”¹²³ and allows HUD to determine the “program requirements” and “performance metrics” for Choice Neighborhoods.</p>
<p>Known limitations</p>	<p>Despite many successful uses of HOPE VI funds for neighborhood revitalization, the program remains chronically underfunded and represents only a small portion of HUD’s budget. In addition, PHAs that apply for HOPE VI funds are frequently cash-constrained and may not have the resources to build to high sustainability and energy efficiency specifications. Thus, when revising HOPE VI application procedures and other basic requirements of the program, HUD should take the funding limitations of PHAs into account, and consider making appropriate resources available to ensure that all PHAs have a fair opportunity to compete for HOPE VI funds.</p>

¹²³ FY 2010 Appropriations Act for Transportation and HUD, Pub. L. No. 111-117 at 47-48.

O. WEATHERIZATION ASSISTANCE PROGRAM Reform Weatherization Assistance Program to Better Meet the Needs of Multifamily Residential Buildings	
Agency:	Department of Energy
Program:	Weatherization Assistance Program
Authority:	42 U.S.C. § 6861 et seq
Funding:	Recovery Act: \$4.975 billion appropriated (\$4.76 billion awarded) FY 2010 Appropriations: \$210 million ¹²⁴
Discussion:	<p>DOE’s Weatherization Assistance Program (WAP) helps low-income households finance energy efficiency and renewable energy improvements¹²⁵ via grant funding provided to state governments. The statute allows DOE to determine which “insulating or energy conserving devices or technologies” will qualify for WAP assistance,¹²⁶ and also directs DOE to issue standards for “weatherization materials, energy conservation techniques, and balance combinations thereof, which are designed to achieve a healthful dwelling environment and maximum practicable energy conservation.”¹²⁷</p> <p>WAP funds are distributed to state governments “on the basis of the relative need for weatherization assistance among low-income persons throughout the States,”¹²⁸ and allocated by states to individual recipients according to need-based criteria issued by DOE.¹²⁹ The amount of assistance is limited to \$6,500 per dwelling for energy efficiency improvements, and \$3,000 per unit for renewable energy technologies.¹³⁰</p> <p>States have historically directed the bulk of their WAP funds to single family residences, even though the statute specifically authorizes WAP assistance for multifamily rental properties if certain conditions are met.¹³¹ Multifamily properties have difficulty accessing WAP funds</p>

¹²⁴ Committees on Appropriations, *FY 2010 Conference Summary: Energy and Water Appropriations* (2009) http://appropriations.house.gov/pdf/EW_FY10_conference-09.30.2009.pdf

¹²⁵ See Weatherization Assistance Program for Low-Income Persons, 71 Fed. Reg. 35,775 (June 22, 2006) (amending WAP regulations to include renewable energy projects, as provided for in the Energy Policy Act of 2005).

¹²⁶ 42 U.S.C. § 6862(9)(J).

¹²⁷ 42 U.S.C. § 6863(b)(2).

¹²⁸ 42 U.S.C. § 6864.

¹²⁹ 42 U.S.C. § 6865.

¹³⁰ *Id.*

¹³¹ 42 U.S.C. § 6863(b)(5). The statute requires states that provide WAP assistance to rental units to certify that (a) the benefits of WAP assistance accrue primarily to low-income residents; (b) tenants will be protected from rent increases for a reasonable period after weatherization, except where increase is due to a factor other than weatherization; and (c) no “undue or excessive enhancement” will occur to the value of the dwelling units. DOE recently finalized a rule that would interpret requirements (b) and (c) to be

	<p>because (a) owners may have difficulty verifying the income eligibility of tenants; (b) the requirement that WAP benefits “accrue primarily to low-income residents” is difficult to satisfy in cases in which tenants do not pay the cost of utilities; (c) states often require even cash-constrained rental properties to provide matching funds for WAP assistance; and (d) for properties receiving the Low Income Housing Tax Credit (LIHTC), WAP assistance adversely affects the tax treatment of the property.¹³² Recently, DOE finalized an interpretive rule that should help relieve the burden of establishing eligibility for WAP funds for multifamily property owners; however, more needs to be done if WAP is to benefit residents of multifamily properties.</p>
<p>Actions:</p>	<p>Although WAP has proven very effective in supporting small investments in energy efficiency, the recent increase in the per-household cost limits demand improvements in the procedures WAP uses to determine what energy efficiency improvements are most cost-effective in particular dwellings. The current software used by WAP to recommend specific energy efficiency measures is not tailored to multifamily buildings, and relies on general assumptions rather than the building’s actual characteristics. As a result, the WAP program may prescribe incorrect combinations of energy efficiency measures, and fail to achieve the maximum degree of energy savings per dollar invested. DOE should improve its software tools to correctly determine unit-specific energy savings and investment costs, and to model investments that may cost more than the \$6,500 limit on WAP assistance. These tools should also be able to pass DOE and industry developed “physics stress tests” covering mechanical system performance, duct distribution system efficiency, hot water performance, and other systems. Lastly, these tools should be adapted to assess multifamily specific improvements and characteristics, because it is not clear that existing software tools work well for selecting efficiency measures in multifamily buildings.</p> <p>In addition, DOE should take a number of steps to ensure that people living in multifamily dwellings are able to take advantage of WAP assistance:</p> <ol style="list-style-type: none"> 1. Resolve conflicts with states that require matching funds from multifamily properties, if necessary by disapproving allocation plans that

automatically satisfied in the case of public housing, project-based Section 8 housing, Section 202, and Section 811 housing. Weatherization Assistance Program for Low-Income Persons, 75 Fed. Reg. 3,847 (Jan. 25, 2010).

¹³² This is because the LIHTC provisions at 26 U.S.C. § 42(d)(5) require a reduction in the “eligible basis” for the tax credit (essentially, the value of the property used as a basis for computing the tax credit) where any federal grant aid is used to make capital improvements to a LIHTC property.

impose excessive matching requirements. Matching funds are not required by the statute (although they are permitted),¹³³ and arguably place needy households that rent at a disadvantage compared to owner-occupant households. Note that the statute requires DOE to ensure that WAP assistance will be allocated among low-income persons within each state on the basis of relative need,¹³⁴ providing DOE with authority to ensure that multifamily properties are not unduly discriminated against in WAP allocation plans.

2. Encourage states to direct further WAP assistance to multifamily properties in their allocation plans, by (for example) offering WAP assistance to LIHTC properties in the form of loans in order to mitigate the adverse tax consequences described above in note 132. New York State has successfully field-tested this approach, and found that it both increases LIHTC participation and amplifies the reach of limited WAP funds.¹³⁵

3. Using its authority to set standards for materials used in weatherization projects, DOE should develop and promulgate guidelines to ensure that WAP funds maintain or improve air quality where feasible. For example, guidelines should encourage the use of low-VOC paints, caulk, and sealant.

4. DOE regulations permit WAP funds for multifamily residences only for building owners who demonstrate that 66% of households living in the building meet WAP income thresholds.¹³⁶ This 66% minimum requirement is not required by statute and may have the unintended consequence of eliminating affordable housing projects from the WAP program, given that many new affordable housing projects are designed to alleviate concentrated poverty and provide shelter for households spanning a range of incomes. DOE should consider lowering this threshold or, in the alternative, imposing appropriate conditions to ensure that affordable housing projects are not made ineligible for WAP assistance.

5. In the same spirit as the recently finalized rule easing application procedures for multifamily dwellings (see note 131), DOE should promulgate another interpretive rule determining that in properties where

¹³³ 42 U.S.C. § 6863(b)(6).

¹³⁴ 42 U.S.C. § 6865(b)(2)(A).

¹³⁵ Letter from Deborah VanAmerongen, New York State Division of Housing and Community Renewal, to Gilbert Sperling, Department of Energy (Sept. 10, 2009).

¹³⁶ See 75 Fed. Reg. at 3,850. As noted above, DOE's most recent WAP regulations consider this requirement to be automatically met in the case of public housing, Section 8 project-based assisted housing, and Section 202/Section 811 properties.

	tenants do not pay utilities, the benefits of WAP will accrue primarily to low-income residents by enhancing the comfort and economic viability of the affordable housing supply. This recommendation would help many multifamily properties that otherwise have difficulty showing that WAP funds would benefit tenants who are not responsible for their own utility bills.
Known limitations	Using WAP funds to provide below-market loans could still cause many LIHTC properties to suffer a tax penalty, because 26 U.S.C. § 42(b)(1) and (i)(2) reduces the value of the LIHTC by over 50% for “federally subsidized” properties placed in service before June 2008, including properties receiving below-market loans. ¹³⁷ This obstacle can be avoided by providing loans at market rates, or providing loans to properties placed in service after June 2008 (or older properties placed in service before the below-market rule came into effect).

¹³⁷ Under amendments to 26 U.S.C. § 42 included in the Housing and Economic Recovery Act of 2008 (HERA), below-market loans would no longer reduce the value of the LIHTC. However, this change in policy only applies to properties placed in service after the enactment of HERA.

P. NATIONAL HOUSING TRUST FUND	
Ensure that Affordable Housing Developed With Housing Trust Fund Proceeds is Energy Efficient and Sustainable	
Agency	Department of Housing and Urban Development
Program	National Housing Trust Fund (NHTF)
Authority	12 U.S.C. § 4568
Funding	No funds appropriated. However, the Administration has requested a \$1 billion appropriation for FY 2011, ¹³⁸ and Fannie Mae and Freddie Mac are both obligated to set aside dedicated revenues for the NHTF. ¹³⁹
Description	<p>Established under HERA, the NHTF is intended to provide grants to states to expand the supply of rental and owner-occupied housing for homeless families and families with extremely and very low incomes. Proceeds deposited in the NHTF are to be distributed to the states according to a needs-based formula defined in the law.¹⁴⁰ States, in turn, are required to distribute NHTF funds among housing projects according to allocation plans filed with HUD.¹⁴¹ The funds may be used for construction of new housing, or the preservation or rehabilitation of existing housing.</p> <p>Although the statute does not mention energy efficiency or sustainability considerations, HUD enjoys considerable latitude to include such criteria in establishing regulations governing State allocation plans.¹⁴² In particular, HUD is authorized to establish requirements for the application and selection process to be followed by each State in awarding NHTF proceeds to individual projects, including requirements concerning “the merits of an applicant’s proposed eligible activity.” Moreover, HUD is empowered to establish requirements and standards for “performance goals, benchmarks, and timetables” for housing created under the NHTF program.¹⁴³</p>
Actions	HUD should require that housing developed with NHTF funds meet strong energy efficiency and sustainability standards (including location efficiency and access to transportation alternatives), using its authority to establish “performance goals” for the use of NHTF funds. Alternatively,

¹³⁸ Department of Housing and Urban Development, *Investing in People and Places: Fiscal Year 2011 Budget 5* (2010), available at <http://portal.hud.gov/portal/page/portal/HUD/documents/fy2011budget.pdf>.

¹³⁹ 12 U.S.C. § 4567(a).

¹⁴⁰ 12 U.S.C. § 4568(c)(3)(B).

¹⁴¹ 12 U.S.C. § 4568(c)(5).

¹⁴² See 12 U.S.C. § 4568(g)(2).

¹⁴³ 12 U.S.C. § 4568(g)(2)(D), (F).

	HUD could require that states give preference to applications that include minimum energy efficiency and sustainability features, under its authority to regulate allocation plans.
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Q. DATA COLLECTION IN HUD PROGRAMS Gather and Disseminate Data on Benefits and Costs of Energy Efficiency and Sustainability Improvements
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Agency	Department of Housing and Urban Development
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Program	General Data Collection Authority
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Authority	12 U.S.C. § 1701z-2(g)
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Description	<p>In order to inform the development of policy around energy efficient and sustainable buildings, and to improve the acceptance of these technologies in the marketplace, there is an urgent need for reliable and systematic collection of data on the performance of these buildings in practice. There is an equally urgent need to make that data available to the public in a manner that is easy to access and understand. Fortunately, federal law provides HUD with broad authority to engage in data collection at federally-assisted properties.</p> <p>Section 502 of the Housing and Urban Development Act of 1970 directs HUD broadly to require “to the greatest extent feasible” the use of “new and improved technologies, methods, and materials in housing construction, rehabilitation and maintenance under programs administered by [HUD] with a view to reducing costs . . .” HUD is broadly empowered under subsection (g) of this provision to “request and receive such information or data as he deems appropriate from private individuals and organizations, and from public agencies.” This data gathering authority provides HUD with a potentially useful tool for collecting information on the costs, benefits, and effectiveness of energy efficiency and sustainability initiatives in a variety of programs managed by HUD.</p>
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Actions	<p>Although HUD engages in data collection at a small scale in several of its programs, there is considerable scope for HUD to expand the breadth and consistency of its data collection activities.</p> <p>In particular, HUD should strongly consider collecting data related to the energy efficiency of all FHA backed mortgages, single and multifamily. This data collection should include an assessment of the relative efficiency of the property (as determined by building characteristics standardized for occupant behavior) and through the collection of consumption data where possible. HUD should also collect data on mortgage defaults of these loans to determine the effect of energy efficiency on risk of mortgage default. Such data would be an</p>
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	<p>indispensable complement to any efforts on the part of Fannie Mae, Freddie Mac, and the federal banking regulators to incorporate energy efficiency and location efficiency into appraisal and underwriting of mortgages.</p> <p>HUD should also exercise its authority to gather data on energy use, water use, tenant comfort and other variables from all federally-subsidized housing projects that undertake energy efficiency and sustainability improvements. This data should be compiled and made accessible to the public, preferably through contributions to DOE's existing Residential Energy Consumption Survey (and, where appropriate, the Commercial Buildings Energy Consumption Survey). To enable useful comparisons, HUD should also gather data on the baseline performance of <i>unimproved</i> federally-assisted properties.</p>
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V. OPPORTUNITIES TO ENHANCE THE USE OF EXISTING AUTHORITIES IN THE COMMERCIAL BUILDINGS SECTOR

A. SMALL BUSINESS ACT AND SMALL BUSINESS INVESTMENT ACT Encourage Use of Small Business Administration Financing for Energy Efficiency and Sustainability Improvements	
Agency	Small Business Administration
Program	Loans and Loan Guarantees for Small Business Capital Investment
Authority	15 U.S.C. § 631 et seq. 15 U.S.C. §§ 695-96
Funding	FY 2010 Appropriations (H.R. 3170, as agreed to by Senate Committee on Appropriations): \$17.5 billion (limit on principal loan amounts guaranteed under Section 7(a)); \$7.5 billion (limit on principal loan amounts for certified development companies); \$1 million for Energy Efficiency Program
Description	<p>Under the Small Business Act, the Small Business Administration (SBA) has a number of authorities that could be used to finance energy efficiency and sustainability enhancements at commercial buildings owned by qualifying small businesses:</p> <p>1. <i>Section 7(a) Loan Guarantees.</i> The Small Business Act authorizes SBA to provide direct loans or loan guarantees to small business concerns for plant acquisition, construction, conversion, or expansion, including the acquisition of land, material, supplies, and equipment. The section provides various limitations on the total amount of the loan or guarantee, the interest rate, prepayment, repayment period, and other financing terms.¹⁴⁴ There are no specific obstacles to using Section 7(a) loans for energy efficiency and sustainability improvements in commercial buildings; however, providing adequate security for the loan may be difficult in circumstances where the small business only has a leasehold interest in the commercial property.</p> <p>In EISA 2007, SBA was specifically authorized to include renewable energy and energy efficiency projects in its existing “Express Loan” program, which provides simplified lender-based documentation procedures and expedited processing times.¹⁴⁵</p>

¹⁴⁴ 15 U.S.C. § 636(a).

¹⁴⁵ 15 U.S.C. § 636(a)(31).

EISA 2007 also directed SBA to establish a two-year pilot program¹⁴⁶ under which 50% of the fees for 7(a) loans would be waived where the loan proceeds are used to purchase energy efficient designs, equipment, or fixtures, or to reduce energy consumption by at least 10 percent. It appears that SBA has not yet implemented this pilot program.

SBA also appears to have general authority to create “pilot programs” not expressly authorized by law, so long as they affect not more than 10% of the total number of loan guarantees provided in a given fiscal year.¹⁴⁷

2. *Certified Development Company Loan Authority.* Under the Small Business Investment Act, SBA provides loans to nonprofit “certified development companies” for the purpose of, among other things, helping businesses reduce energy consumption by at least 10% or increase “use of sustainable design, including designs that reduce the use of greenhouse gas emitting fossil fuels, or low-impact design to produce buildings that reduce the use of non-renewable resources and minimize environmental impact,” or “plant, equipment and process upgrades of renewable energy sources such as the small-scale production of energy for individual buildings or communities consumption, commonly known as micropower, or renewable fuels producers including biodiesel and ethanol producers.”¹⁴⁸ Loans provided under this authority do not appear to be restricted in duration, interest rate, and other terms as Section 7(a) loans are; indeed, the statute states that development companies must provide SBA with obligations that “bear interest at such rate, and contain such other terms, as the Administration may fix”¹⁴⁹

In addition, the Small Business Investment Act authorizes SBA to make loans for plant acquisition, construction, conversion, or expansion, in larger amounts than SBA may make under its own direct lending/guarantee authority under Section 7(a).¹⁵⁰

3. *Small Business Energy Efficiency Program.* SBA was required by EISA 2007 to develop a small business energy efficiency program that works through small business development centers to, among other things, offer free energy audits, provide energy efficiency information, facilitate on-bill financing of energy efficiency improvements, help

¹⁴⁶ 15 U.S.C. § 636(a)(32).

¹⁴⁷ 15 U.S.C. § 636(a)(25).

¹⁴⁸ 15 U.S.C. § 695(d)(3).

¹⁴⁹ 15 U.S.C. § 695(b).

¹⁵⁰ The loan ceiling is \$2 million when the small business is undertaking one of the green building / energy efficiency / renewables purposes described above, and the ceiling is \$4 million if the facility produces renewable energy or will reduce the borrower’s energy consumption by at least 10%.

	<p>businesses evaluate “opportunities to design or construct high performance green buildings,” and support businesses in securing financing for energy efficiency and high performance green buildings. This program has a limited appropriation of only \$1 million in funding in FY 2010.¹⁵¹</p>
<p>Action</p>	<p>1. SBA should implement the energy efficiency pilot program mandated in EISA 2007. In addition, SBA should consider creating additional pilot programs under the general authorization provided in 15 U.S.C. § 636(a)(25), as a way of experimenting with the adjustment of loan fees, application procedures, terms and conditions to suit the particular needs of businesses undertaking energy efficiency and green building projects.</p> <p>2. SBA should encourage lenders participating in its 504 and Section 7(a) programs (especially the “Express Loan” program for energy efficiency and renewable energy) to advertise the benefits of using these tools to finance energy efficiency improvements and green building measures. SBA should also consult with lenders and borrowers to determine whether barriers to the use of these programs would justify changes in the terms and conditions of these loans, or the application and underwriting process, that are appropriate for energy efficiency and green building projects (this is especially true of the 504 program, which provides SBA considerable flexibility to set loan terms and conditions).¹⁵²</p> <p>SBA should also clarify in its program documentation whether 504 and Section 7(a) financing may be used for energy efficiency and sustainability upgrades in leased properties, subject to appropriate terms and conditions (such as minimum length of lease or a covenant that the property will only be leased to small businesses for a specified period). The statute does not appear to prohibit such loans, although practical problems – such as the difficulty of arranging acceptable security for these loans – may need to be overcome. Thus, SBA should determine whether innovative financing arrangements (such as a repayment obligation that follows the property) are necessary to facilitate such transactions.</p> <p>Energy modeling using ASHRAE Standard 90.1 and COMNET could be referenced as a means for demonstrating the required 10% reduction in energy consumption under Section 7(a) or elsewhere.</p>

¹⁵¹ 15 U.S.C. § 657(h).

¹⁵² At least one lender, Green Commercial Capital, advertises “Green 504 Loans” for businesses interested in energy efficiency and sustainability enhancements. <http://www.mymortgagebanker.com/Renewable-Alternative-Green-Energy.php>.

	<p>3. SBA should implement the Small Business Energy Efficiency Program. Although the program has an extremely limited appropriation, SBA may be able to maximize its impact by leveraging additional resources from potential partners in the public and private sectors (for example, state economic development agencies or nonprofit business development centers). In particular, providing information to small design, engineering and construction firms about SBA programs for energy efficiency, as expressly authorized in statute, will enable the building industry to educate its clients (who are both small and large businesses) about the benefits and opportunities in green building.</p>
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B. NEW MARKETS TAX CREDIT
Grant Priority in Allocation of New Markets Tax Credits
to Community Development Entities With
A Successful Track Record of Assistance for
Energy Efficient and Sustainable Buildings

Agency	Department of the Treasury
Program	New Markets Tax Credit
Authority	26 U.S.C. § 45D
Funding	\$5 billion (2009 level) ¹⁵³
Description	<p>The New Markets Tax Credit (NMTC) program creates a limited pool of tax credits for distribution to “qualified community development entities” (CDEs) as an incentive for taxpayer equity investments in low-income communities. Under the program, taxpayers that make equity investments in CDEs are given a tax credit equal to 5 to 6% of the investment, for a period of seven years.¹⁵⁴</p> <p>CDEs are certified by the Treasury Secretary (through the Community Development Financial Institutions Fund) and must use substantially all of the NMTC-incentivized investments to support low-income community businesses through loans, equity investments, purchases of loans to these businesses, financial counseling, or financing of other CDEs.¹⁵⁵ Section 45D(f)(2) of the Internal Revenue Code requires the Secretary to allocate the credits among CDEs giving priority to CDEs with a successful track record of capital or technical assistance to disadvantaged businesses or communities. The only other priority factor mentioned in the statute relates to conflicts of interest; the statute does not specifically authorize the use of other factors (but does not explicitly bar other factors, either). Subsection (i) authorizes the Secretary to prescribe regulations “as may be appropriate to carry out this section” and that “impose appropriate reporting requirements.”</p>
Action	The NMTC is a vehicle for channeling private investments to businesses active in low-income communities, and as such could be a useful way to encourage funding of energy efficiency and green building improvements at commercial buildings in low-income communities that might not otherwise have access to capital for such improvements. In addition, NMTC-leveraged investments could be used to provide capital for businesses that themselves provide energy efficiency and green building services in low-income communities.

¹⁵³ Recovery Act § 1403 (amending 26 U.S.C. § 45D(f)(1)).

¹⁵⁴ 26 U.S.C. § 45D(a)(2)-(3).

¹⁵⁵ 26 U.S.C. § 45D(b)(1).

In order to encourage the use of NMTC-leveraged funds for such purposes, the Treasury should consider whether CDEs that develop a record of providing capital for cost effective energy efficiency and green building measures could have that record taken into account for allocations of NMTC credits, under the Treasury’s mandate to prioritize NMTC credits for CDEs with a “successful track record.” This interpretation of the term does not appear to contradict the statute, and should be reasonable assuming that other aspects of a CDE’s track record are also taken into account. Thus, it appears likely that Treasury could designate energy efficiency and green building investments as a factor to be considered in allocating NMTC credits, although not in a way that is wholly independent of consideration of a CDE’s “successful track record.”

Although the NMTC is primarily used to assist the commercial buildings sector, some applicants have used NMTC in conjunction with HOPE VI funds to improve multifamily affordable housing. Treasury should ensure that any reforms to the NMTC program take into account creative leverage of NMTC funds with HOPE VI or other programs in support of energy efficient and sustainable buildings.

C. FEDERAL ENERGY MANAGEMENT Leverage Federal Funding Through Energy Performance Contracts	
Agency:	Government-wide
Program:	Federal Energy Efficiency Goals
Authority:	42 U.S.C. § 8253 42 U.S.C. § 8287
Description:	EO 13514 and EISA 2007 mandated increased energy efficiency goals for the United States government, and both further mandated some of the measures to attain these goals. EISA increased the reduction in energy use by federal facilities to 30% by 2015 and EO 13514 aims to reduce energy intensity by 15% by 2015 and mandates that 50% of energy consumption come from new renewable sources. EISA Section 432 calls for auditing of 75% of federal facilities on a four year schedule. In addition, the provision mandates that the energy savings of all projects, regardless of funding stream, be measured and verified. Section 512 allowed for the federal government to leverage financing with appropriated dollars.
Action:	<p>1. Fully and immediately implement Section 432 of EISA. While the DOE has begun consideration of implementation, it has been slow going and has thereby delayed impact on energy efficiency in the federal sector. Even if funding was not available to implement the projects identified in audits, the government can encourage the use of private financing to get the job done quickly. The section also calls for public disclosure of actions by each federal agency in a web based tracking system.</p> <p>2. Similarly, the federal government has not implemented Section 512 of EISA, which would allow agencies to put appropriated dollars together with private financing to leverage larger projects (with renewable energy for example) quickly. Some federal agencies are leveraging funds and others are not. The Office of Management and Budget could issue guidance so that all federal agencies are free to leverage funding if they find it useful in accomplishing their goals. If, for example, the funding provided in ARRA for sustainable federal facilities had leveraged private sector dollars, three to four times more efficiency would be accomplished with the same multiplier applied to jobs creation.</p> <p>3. Agencies should be encouraged by the White House to re-invigorate the Energy Savings Performance Contracting (ESPC) and Utility Energy Service Contracting (UESC) programs as one way to achieve the administration goal of greening 75% of federal buildings. A White House</p>

	<p>Staff position should be added at the Council on Environmental Quality or the Office of the Federal Environmental Executive to work with agency staff directly. The Federal Energy Management Program at DOE should be directed to find ways to increase both the number and size of comprehensive energy projects. This might include work to streamline the ESPC process through reducing both the cycle time and the project approval process.</p> <p>4. The Office of Management and Budget issues a scorecard for federal agencies on achievement of energy, renewables, greenhouse gas emissions reduction, sustainability, recycling and other goals. Use of ESPC-financed and UESC-financed projects should be added to the scorecard.</p> <p>5. The federal government, recognizing the limitations of the federal purse for energy efficiency, renewable energy and sustainability, has historically relied on private financing such as energy performance contracting and utility energy service contracts; however, agencies remain concerned about the cost of financing. The Department of the Treasury could institute a program of Treasury-backed financing for these types of contracts between energy service companies and federal agencies or facilities.</p>
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D. FEDERAL BUILDING STANDARDS Improved Energy Efficiency and Sustainability Standards for Federal Buildings	
Agency:	Department of Energy General Services Administration
Program:	Energy efficiency and sustainable design standards for federal buildings
Authority:	42 U.S.C. § 6834(a)(3)(D)
Description:	<p>The Energy Policy and Conservation Act, as amended by Section 433 of the Energy Independence and Security Act of 2007, required the Department of Energy to establish revised performance standards for new and renovated Federal buildings (including Department of Defense buildings, privatized military housing, and buildings built for the purpose of leasing to a Federal agency)¹⁵⁶ by December 18, 2008. To our knowledge, these standards have not yet been proposed, although an October 2009 GAO report indicated that new fossil fuel consumption standards are in development at DOE.¹⁵⁷</p> <p>The standards called for in Section 433 would impose aggressive efficiency and renewable energy targets, requiring a reduction in fossil fuel energy consumption relative to 2003 levels by 65% by fiscal year 2015, and 100% by 2030. In addition, the statute requires that “sustainable design principles . . . be applied to the siting, construction, and design” of federal buildings.¹⁵⁸ Accordingly, DOE must specify an appropriate green building certification system (based on findings prepared by the Office of Federal High Performance Green Buildings) and a minimum level of certification for federal green buildings, established in consultation with GSA (and DOD, for defense-related facilities). These green building performance criteria must be updated every five years in accordance with a periodic study of third-party green building certification systems to be carried out by GSA’s Office of Federal High Performance Green Buildings.¹⁵⁹ Although the statute does not explicitly require new and renovated federal buildings to achieve certification, DOE arguably has authority to do so under its mandate to apply sustainable design principles to federal buildings through the standard-setting process.</p> <p>In addition to the Section 433 standards described above, Section 109 of</p>

¹⁵⁶ 42 U.S.C. § 6832(6).

¹⁵⁷ Government Accountability Office, *Federal Energy Management: Agencies Are Taking Steps to Meet High-Performance Federal Building Requirements, But Face Challenges* 10 (GAO-10-22, 2009).

¹⁵⁸ 42 U.S.C. § 6834(a)(3)(D)(i).

¹⁵⁹ 42 U.S.C. § 6834(a)(3)(D)(iv).

	<p>the Energy Policy Act of 2005 required DOE to develop updated energy efficiency and sustainability performance standards for new federal buildings.¹⁶⁰ These Section 109 standards would, “if life-cycle cost-effective,” require that new federal buildings be designed to be at least 30% more energy efficient than the 2004 ASHRAE standard, include water conservation technologies if “life-cycle cost-effective,” and apply “sustainable design principles.” DOE promulgated the energy efficiency component of these standards in 2007,¹⁶¹ but has not to our knowledge promulgated the sustainable design principles or water conservation standards. Moreover, the 2007 standards arguably did not go as far as the statute allows to improve building efficiency – in particular, the standards allowed each agency to determine cost-effectiveness independently, and did not require that agencies consider achieving efficiencies of greater than 30% over the 2004 ASHRAE standard.</p>
<p>Action:</p>	<ol style="list-style-type: none"> 1. DOE should move quickly to promulgate the Section 433 standards. In addition, DOE should revise its Section 109 standards to (a) establish a single minimum standard of performance applicable to all new federal buildings and (b) require greater than 30% improvements over the 2004 ASHRAE standard where it is cost effective to do so, as the law required. If water conservation and sustainable design principles are not covered in the Section 433 standards, DOE should address those aspects of building performance in the revised Section 109 standards as well. 2. Although the General Services Administration (GSA) has worked to incorporate sustainable design principles into construction leases and major renovation leases for federal agencies, the GSA’s template Solicitation for Offers (SFO) for federal leases¹⁶² could be revised further to encourage greater energy efficiency in leased space. Specifically: <ul style="list-style-type: none"> • The specified electricity load for federal office space should be revised from 7 Watts per square foot to 2 Watts per square foot; • The overhead lighting requirements could be revised to 30 foot candles, augmented by task lighting; • The lease should include an incentive structure (possibly modeled on those included in the retrofit of the Empire State Building) that allows the federal agency leasing the space and the building owner to share the rewards of energy efficiency investments and efficient operating practices;

¹⁶⁰ 42 U.S.C. § 6834(a)(3)(A).

¹⁶¹ Energy Conservation Standards for New Federal Commercial and Multi-family High Rise Residential Buildings and New Federal Low-Rise Residential Buildings, 72 Fed. Reg. 72,565 (Dec. 21, 2007).

¹⁶² Solicitation for Offers (Aug. 2008), *available at* http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf.

	<ul style="list-style-type: none">• The lease should require the building to have achieved an Energy Star label at the time of the lease (as required under Section 435 of the Energy Independence and Security Act) or, in the case of new construction, the lease should require that the federal agency take appropriate corrective action if the Energy Star label has not been obtained.
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E. ENERGY EFFICIENT COMMERCIAL BUILDINGS TAX DEDUCTION Outreach to State and Local Governments to Encourage Use of the Tax Deduction to Improve Efficiency of Public Buildings and Facilities	
Agency	Internal Revenue Service
Program	Energy Efficient Commercial Buildings Deduction
Authority	26 U.S.C. § 179D
Description	The Energy Policy Act of 2005 provided a tax deduction of up to \$1.80 per square foot to owners of commercial buildings that install energy efficient lighting, HVAC systems, hot water systems, or building envelopes. ¹⁶³ To qualify, the equipment must be certified to be part of an overall strategy to reduce the building’s energy consumption by 50% relative to a reference building, or (for a lower-value “partial credit”) the equipment must meet minimum performance criteria established by the IRS. ¹⁶⁴ Subsequent guidance issued by the IRS provided that where the building owner is a government entity (and therefore unable to make use of tax deductions), the tax deduction may be allocated to the “designer” of the energy efficiency improvement – including architects, engineers, or contractors responsible for creating the technical specifications for the equipment. ¹⁶⁵
Action	<p>A tax deduction for energy efficient commercial buildings is a potentially powerful economic incentive to drive aggressive improvements in the commercial buildings space. However, among the reasons that the tax deduction has had disappointing results thus far are (1) the procedures established by the IRS to obtain the deduction are cumbersome and exceedingly expensive to follow; and (2) awareness of the tax deduction appears to be low, especially among state and local government agencies (who may be able to use their ability to allocate the tax deduction as a way to lower the cost of energy efficient improvements). To address these problems, the IRS should:</p> <p>1. Revise its existing guidance on the Section 179D tax deduction both to provide needed detail and to simplify needlessly burdensome requirements. Specific areas for improvement include:</p> <ul style="list-style-type: none"> • As the IRS has done with the similar new homes tax credit, the IRS should provide technical guidance for computing projected energy savings that is based on the California Alternative Calculation Method (ACM) manual, which is widely understood

¹⁶³ 26 U.S.C. § 179D(b).

¹⁶⁴ 26 U.S.C. § 179D(d)(1).

¹⁶⁵ Internal Revenue Service, *Amplification of Notice 2006-52* at Section 3 (Notice 2008-40, 2008).

	<p>and also mentioned as a reference for calculation procedures in the text of Section 179D itself.</p> <ul style="list-style-type: none">• To eliminate confusion and potential abuse of the tax deduction, the IRS should provide uniform regional energy cost assumptions for use in estimating building energy savings.• As required by the ACM manual, IRS should require that modeling software automatically generate the “reference” building against which energy savings are measured. Software meeting this requirement can be readily produced and would save considerable time and effort for potential applicants.• IRS guidance for the partial tax deduction (for individual lighting, HVAC, water heating, or envelope systems) should be more specific and prescriptive, instead of requiring costly software modeling (which is not required by Section 179D for the partial deduction). <p>2. In addition, the IRS should expand public outreach on Section 179D to include education to state and local government agencies, as well as to the design and construction industry, about the opportunities for designers to claim the tax deduction for public buildings which will help improve energy performance for new and renovated public buildings, including schools, civic centers, public hospitals and other public facilities.</p> <p>3. Lastly, taxpayers may be reluctant to claim the commercial buildings tax deduction because the IRS has not provided a specific form for doing so. Without forms, the IRS also has no way of tracking how many taxpayers have claimed the deduction and for what amount. The IRS should produce a form to provide taxpayers with greater certainty (and documentation in the case of an audit), and to provide the IRS with more information on the use of the deduction.</p>
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F. OFFICE OF COMMERCIAL HIGH PERFORMANCE GREEN BUILDINGS Accelerate Market Transformation Through Commercial Buildings Initiative	
Agency	Department of Energy
Program	Office of Commercial High Performance Green Buildings Zero Net Energy Commercial Buildings Initiative
Authority	42 U.S.C. § 17081 et seq
Funding	FY 2010 Budget Request: \$40 million
Description	<p>EISA 2007 required the Assistant Secretary of EERE to appoint a Director of Commercial High Performance Green Buildings to, among other things, establish a public-private partnership with an eligible green buildings “consortium” responsible for developing the Zero Net Energy Commercial Buildings Initiative (CBI); coordinate with the office of Federal High Performance Green Buildings; promote research and development into high performance green buildings; and establish a green buildings “clearinghouse” to disseminate info about commercial green building.</p> <p>The CBI is required to develop and disseminate technologies, practices and policies that will lead to the introduction of zero net energy commercial buildings by 2030, and cause zero net energy buildings to make up 50% of the commercial building stock of the United States by 2040 and all commercial buildings in the U.S. by 2050. Authorized activities in pursuit of these goals include research and development; pilot and demonstration programs; technical assistance activities; development of training materials and courses; support for code-setting organizations and local regulators seeking to develop minimum performance standards for buildings; development of strategies for overcoming split incentives facing landlords and tenants; and developing measures of energy savings and performance.¹⁶⁶</p>
Action	<p>A crucial obstacle for diffusion of energy efficiency and green building practices in the commercial sector is the “split incentives” issue explicitly mentioned in EISA 2007. To attract private investment for high performance green commercial buildings, developers of high performance green commercial buildings must be able to capture the benefits of these buildings through increased sale prices and appraisals, and owners of such buildings must be able to charge rents that fully reflect their benefits.</p> <p>Because of its mandate to develop partnerships and alliances with the private sector, and its authority to specifically engage in research and</p>

¹⁶⁶ 42 U.S.C. § 17082(d).

	<p>strategizing around the split incentives issue, CBI is in a unique position to make an impact on this problem. CBI could, for example, research and publicize different disclosure or labeling practices for commercial building sales and leases that allow participants in the commercial real estate market to quickly understand a building's green features and their economic benefits (such as reduced water and energy bills, or enhanced productivity).</p>
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**G. HISTORIC BUILDINGS REHABILITATION TAX CREDIT
Revise Standards of Rehabilitation to Encourage Energy Efficient
and Sustainable Improvements of Historic Buildings**

Agency	National Park Service
Program	Rehabilitation Tax Credit
Authority	26 U.S.C. § 47
Description	Section 47 of the Internal Revenue Code allows taxpayers to claim a tax credit equal to twenty percent of qualified rehabilitation expenditures on historic structures. In order to qualify, the rehabilitation must be certified by the National Park Service as consistent with the historic character of the structure, pursuant to rehabilitation standards codified at 36 C.F.R. Part 67.
Action	<p>Although the National Park Service provides general guidance on the incorporation of energy efficient features into historic structures on its website, there is a need for the agency to issue updated, more specific, and expanded standards and guidance to ensure that historic rehabilitations include appropriate energy efficiency and sustainability features. In preparing these standards and guidance, the agency should consider consulting outside experts on historic preservation and green building, as well as other federal agencies such as the Department of Energy and the Environmental Protection Agency. More specifically, the agency should:</p> <ol style="list-style-type: none"> 1. Evaluate the Secretary of the Interior’s Standards for the Treatment of Historic Properties to determine whether energy efficiency and sustainability principles should be incorporated into the Standards. 2. Update its existing guidance on energy efficiency and expand that guidance to include incorporation of sustainable materials and other green building practices. 3. Issue guidance on the sensitive integration of renewable energy features into historic structures and sites. 4. Establish an interagency liaison, and cooperate with the Department of Energy and the Environmental Protection Agency, to explore the possibility of extending the existing Energy Star labeling system to older buildings (while avoiding a proliferation of rating systems that would cause consumer confusion).

APPENDIX A: BACKGROUND ON ENERGY EFFICIENT & SUSTAINABLE BUILDINGS

A. *Benefits of Energy Efficient and Sustainable Buildings*

Years of experience have shown that energy efficient and well-operated buildings are superior buildings in three major ways:

1. *Such buildings save money.* Conventional buildings consume significant quantities of energy, and are often not designed, built or operated to maximize the efficient use of energy or water. Studies have consistently found that green buildings use 25-30% less energy than buildings built to modern commercial codes.¹⁶⁷ For a large office building, these savings can translate into annual savings in energy expenses on the order of tens of thousands of dollars. Similarly, Energy Star and other third party certified green buildings have been observed to achieve reductions of 30% in indoor water consumption, and over 50% for outdoor water use.¹⁶⁸ Of course, these savings only account for part of the economic benefits of green buildings: the enhanced productivity and improved health of occupants, and reduced environmental impact of the buildings, also have important economic benefits that accrue to individuals, employers, and to society at large.¹⁶⁹

The federal government itself has observed these benefits in its own experience with green buildings. A 2008 study of twelve high performance buildings owned by the General Services Administration (GSA) found that nine of the twelve buildings had lower than average operating costs (taking into account utilities, maintenance, and waste and recycling), with cost savings of over 40% in three cases.¹⁷⁰ The two LEED Gold buildings in the study performed exceptionally well, achieving an overall energy cost savings of 43% and water consumption savings of 54% compared to the average office building.¹⁷¹

2. *Such buildings contribute to energy security, and reduce greenhouse gas emissions and other environmental impacts.* Reducing the energy consumption of the built environment is an indispensable component of a national strategy to reduce dependence on unstable energy supplies and to reduce greenhouse gas emissions. Buildings account for approximately 40% of primary energy use in the U.S., and over a third of our emissions.¹⁷² Building energy efficiency improvements are cited by the Intergovernmental Panel on Climate Change (IPCC) as the single most cost-effective

¹⁶⁷ See Kats at 19.

¹⁶⁸ *Id.* at 40.

¹⁶⁹ *Id.* at ix; Mark Lucuik et al, *A Business Case for Green Buildings in Canada* 30-32 (2005), available at <http://www.cagbc.org/uploads/A%20Business%20Case%20for%20Green%20Bldgs%20in%20Canada.pdf>.

¹⁷⁰ Kim M. Fowler & Emily M. Rauch, *Assessing Green Building Performance: A Post Occupancy Evaluation of 12 GSA Buildings* ix (Pacific Northwest National Laboratory 2008) (GSA).

¹⁷¹ *Id.* at xvii.

¹⁷² Marilyn A. Brown et al, *Towards a Climate Friendly Built Environment* 1 (Pew Center on Global Climate Change, 2005).

greenhouse gas reduction technique – offering the potential to reduce global emissions from the commercial and residential sector by nearly 30% below business as usual by 2020 at no net cost.¹⁷³ Buildings that are designed according to accepted consensus standards also have a number of other environmental benefits, including reduced burdens on local water supplies; reduced contributions to storm-water volumes and run-off pollution; diminished consumption of raw materials; reduced emissions of air pollutants from boilers and furnaces; reduced releases of harmful toxins such as volatile organic compounds and heavy metals; and reduced contributions to landfill waste and its associated land and water contamination.¹⁷⁴

3. *High performing, green buildings are healthier places to live and work.* The materials used in green buildings are deliberately designed to achieve superior indoor air quality by reducing occupant exposure to hazardous compounds or substances. Green buildings also boast enhanced comfort due to an emphasis on the use of natural light and careful climate control. Thus, individuals who live and work in green buildings generally report higher levels of productivity and satisfaction than those who work in conventional buildings.¹⁷⁵ This result was borne out in the GSA survey of green federal buildings, which found that users of these buildings reported higher-than-average satisfaction with respect to all aspects of the building, including lighting, air quality, and thermal comfort.¹⁷⁶

These advantages would counsel greater federal support for energy efficient and sustainable buildings even in a time of prosperity. In this period of severe economic distress, however, the multifamily residential and commercial building sectors offer especially attractive opportunities to create much-needed jobs that will directly benefit middle and low-income families and local economies. Energy efficiency retrofits and other green improvements tend to be labor intensive; draw on local sources of materials and labor (for most sustainably designed buildings); enhance local property values;¹⁷⁷ and contribute in myriad ways to economic recovery.

B. Barriers to Wider Adoption of Energy Efficient and Sustainable Building Practices

Despite rapid growth in recent years, as of 2009 green buildings only represented two percent of new residential and commercial construction in the U.S.¹⁷⁸ To be

¹⁷³ Levine, M. *et al.* 2007. “Chapter 6: Residential and commercial buildings.” In *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press: Cambridge, United Kingdom and New York, NY, USA.

¹⁷⁴ See, e.g., CRS, *Issues in Green Building* at 4-10.

¹⁷⁵ Kats at 67.

¹⁷⁶ GSA at xiv.

¹⁷⁷ Department of Energy, *The Business Case for Sustainable Design in Federal Facilities* 2-34 (2003), available at http://www1.eere.energy.gov/femp/pdfs/buscase_section2.pdf.

¹⁷⁸ CRS, *Issues in Green Building* at 17.

effective, efforts to promote green building through existing legal authorities should seek to address critical and sometimes interrelated barriers to improving the efficiency and sustainability of new and rehabilitated buildings. These barriers include:

1. *“Split incentives.”* Building design decisions are the result of a complex interaction between lenders, owners, builders, architects, regulators, and tenants, all of which have varying interests when it comes to energy efficiency and sustainability features. Multifamily and commercial buildings in particular are vulnerable to “split incentive” problems in which the party that bears the cost of making energy efficiency investments – typically a landlord or developer – may not capture an adequate share of the financial benefits of those investments, which often accrue to the tenants of the building over time.¹⁷⁹

2. *Imperfect information.* Information about the costs and advantages of green building practices can be difficult for owners and occupants to obtain and evaluate – potentially causing these market players to undervalue the long-term benefits of green buildings, or deterring them from considering green buildings at all.¹⁸⁰ This barrier also aggravates the split incentives problem in rental properties, by making it difficult for property owners to recover the cost of green investments through higher rents or resale values.

3. *Capital constraints.* Owners and occupants of multifamily and commercial buildings – including small businesses and nonprofit housing providers – typically have limited access to credit and thus have difficulty managing the upfront costs of energy efficiency and other green building improvements.

4. *Failure to internalize all benefits.* Many of the benefits of green buildings, such as reduced greenhouse gas emissions and minimized burdens on local landfills, are enjoyed by the public at large rather than owners and tenants.

5. *Regulatory barriers.* As discussed further below, federal regulations can pose unintended obstacles to green improvements, particularly in the multifamily residential sector. For example, owners of federally-assisted multifamily housing often operate under income restrictions that may deprive them of an incentive to make green improvements. In addition, federally-assisted properties can be subject to limits on development costs or debt financing that constrain the ability of property owners to undertake green improvements.

C. Policy Tools to Promote Energy Efficient and Sustainable Buildings

In general, the policy options identified in this report fall into the following general categories:

¹⁷⁹ CRS, *Energy Efficiency in Buildings* at 6.

¹⁸⁰ Brown et al at 20.

1. *Voluntary standards, labels, and certification.* Voluntary certification programs such as Energy Star have proven to be effective tools for overcoming the information barriers described above and rewarding producers of energy efficient products. The government can build on this success by strengthening such standards and extending them to new types of structures and products.

2. *Mandatory product standards.* Where authorized by law, agencies can overcome the barriers above by imposing mandatory performance standards on discrete building components such as heating systems.

3. *Conditional or preferential access to public funds or subsidies.* Where the government is in a position to facilitate financing for new building or building improvements, the government can encourage adoption of energy efficient and sustainable features by making federal support conditional on minimum levels of efficiency or environmental performance, or offering preferential financing for public agencies and individual property owners to undertake green improvements.

4. *Facilitating low-cost capital.* The government can help building owners overcome capital constraints by providing loan guarantees and insurance, or – in the case of federally-assisted housing – by removing regulatory barriers such as restrictions on property encumbrances or constraints on the use of financial reserves.

5. *Procurement and demonstration.* The federal government can use its power as a major consumer to both create a market for energy efficient and sustainable buildings, and demonstrate the benefits of these buildings to the larger public. Adjusting building and procurement standards to favor energy efficient and sustainable building designs and components, and publicizing model practices in federal buildings, are both powerful tools for transforming the larger market.

6. *Public communications.* By producing accessible publications and convening effective seminars and training workshops, the government can help overcome the informational barrier described above.

7. *Data collection.* The government can collect detailed data on energy use and environmental performance in its own buildings and, where authorized by law, buildings receiving federal assistance. Such data would be useful in illuminating types of buildings or equipment that present the greatest opportunities, and guiding future policy interventions.

8. *Green building personnel.* The government can encourage agencies to be proactive in using their authorities to promote energy efficiency and sustainability by tasking key agency personnel with green building responsibilities, providing proper training, and rewarding personnel for green building innovations.

9. *Department-level strategic planning.* The government can require agencies to engage in high-level strategic planning around green building practices in the multifamily and commercial building sectors, much as the *Recovery Through Retrofit* initiative calls for interagency planning for energy efficiency in the single family residential sector

APPENDIX B: ACKNOWLEDGMENTS

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- **General Services Administration:** Kevin Kampschroer, Director of the Office of Federal High-Performance Green Buildings; Rebecca Stevens, Senior Legislative Advisor to the Public Buildings Service; and
- **House of Representatives:** Staff to the House Committee on Financial Services

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