

An Update and Look Forward

BETTER BUILDINGS THROUGH EXECUTIVE ACTION

Leveraging Existing Authorities to Promote Energy Efficiency and Sustainability in
Multifamily, Residential and Commercial Buildings

2012



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I. EXECUTIVE SUMMARY

Opportunities abound for the Obama-Biden Administration to utilize its existing legal authorities to drive improvements in the energy efficiency and sustainability of the nation’s multifamily and commercial buildings—without seeking new funding or authority from Congress. “We Can’t Wait” has become the motif for this Administration to take executive actions now that will spur jobs creation and economic growth. In that spirit, this report focuses on identifying opportunities to accelerate the employment, economic and environmental benefits of building energy efficiency retrofits and generate greater effectiveness in federal policy implementation.

Over the last three years, our organizations have worked closely with federal government officials to identify executive policymaking opportunities to achieve greener buildings. In April 2010, a diverse group of twelve organizations came together, led by the U.S. Green Building Council, to release a comprehensive report entitled *Using Executive Authority to Achieve Greener Buildings: A Guide for Policymakers to Enhance Sustainability and Efficiency in Multifamily Housing and Commercial Buildings* (the “2010 Report”) outlining dozens of areas in which progress could be made without new authority or funding from Congress. The report, which made nearly 100 specific recommendations for nearly three dozen programs with funding authority of more than \$72 billion, called on the Administration to quickly seize these promising opportunities to save energy, create jobs, and build healthier living and working environments.

Since the publication of the 2010 Report, the unemployment crisis has deepened and Congress has become further paralyzed by partisan gridlock and concerns over the deficit and national debt. Energy efficient and sustainable buildings are a potentially potent engine for job creation and economic growth, but only if matched by supportive federal policies. Accordingly, the Administration must continue to advance those legal and policy tools that are already available to encourage investment in high-performance, efficient green buildings. This update to the 2010 Report evaluates the significant progress the Administration has made in using these existing legal authorities, and builds on that report by identifying even more programs and authorities that could be employed to spur a transformation of the nation’s building stock.

Over the last year, Federal agencies have made significant progress in implementing proposals that were presented in our 2010 Report and, in line with the report, developed innovative use of other existing legal authorities to advance building energy efficiency and sustainability.

Major developments in this regard include:

- The Administration’s “Better Buildings Initiative,” which considers many elements of the 2010 report, such as improving the Energy Efficiency Commercial Building Tax Deduction, using Department of Energy loan guarantees, and utilizing Small Business Administration financing programs to support energy efficiency retrofits at commercial buildings;
- An interagency effort to establish uniform energy efficiency standards across federal housing programs and to require the use of “green capital needs assessments” to identify and encourage energy efficiency or sustainability improvements in federally-assisted housing;

- Reforms that give energy efficient and sustainable housing an “edge” in a number of competitive solicitations managed by the Department of Agriculture and the Department of Housing and Urban Development;
- A joint initiative by the Department of Energy and the Appraisal Foundation to promote consistent and fair appraisal standards and practices with respect to energy efficient and sustainable buildings.

In addition to evaluating these and other developments since the 2010 Report, this report also identifies significant new opportunities within programs and legal authorities that were not covered in the 2010 Report. Some of the most promising opportunities include:

- Facilitating the use of widely-recognized and voluntary residential energy efficiency labels;
- Overcoming obstacles for building owners to capture aggregated data of tenant energy consumption in multi-tenant structures;
- Integrating building energy efficiency and sustainability into programs managed by the Economic Development Administration;
- Better utilizing the Department of Defense’s procurement and research authorities to promote green buildings;
- Implementing all cost-effective retrofits identified through audits carried out by Federal agencies, using energy savings performance contracts (ESPCs) or other innovative financing.

In all, this report presents thirty-two more policy options within twelve different substantive areas of federal policy and twenty-three administrative programs—a substantial addition to the nearly one hundred opportunities identified in the 2010 Report.

Even as this report acknowledges progress made over the last year, it cautions against complacency by the Administration and stakeholders going forward. Some of the initiatives undertaken last year are still in their initial phases, and will only come to fruition after further administrative steps and active implementation. Moreover, not all federal programs have seen progress: dozens of promising opportunities identified in the 2010 Report remain to be implemented. As in 2010, there remains a large gap between what has been accomplished, and what could be accomplished with vigorous use of existing legal authorities. Continued progress on the use of existing legal authorities to “green” the nation’s buildings will therefore require sustained, high-level attention from the Administration and agency officials.

II. INTRODUCTION AND OVERVIEW

This report represents the second phase of a major effort by the U.S. Green Building Council (USGBC) and partner organizations to encourage the Obama Administration to make full use of all available legal tools to improve the energy efficiency and sustainability of the nation’s multifamily and commercial buildings. Sustainable building practices create jobs, support economic growth, and reduce the sector’s environmental footprint.

In April 2010, USGBC and a diverse group of twelve sponsors¹ released a groundbreaking report, entitled *Using Executive Authority to Achieve Greener Buildings* (the “2010 Report”),² that identified promising opportunities for the Obama Administration to use existing legal authorities to encourage efficient and green improvements to new and existing buildings. Addressing almost three dozen Federal programs that directly provide or facilitate approximately \$72 billion in funding and loan guarantees, the 2010 Report identified almost one hundred detailed opportunities for action—none of which would require additional appropriations or legal authorization from Congress. The 2010 Report demonstrated that significant potential for progress in upgrading the nation’s building stock exists, even at a time of severe fiscal constraints and intense partisan gridlock in Congress. As the 2010 Report emphasized, these opportunities would generate jobs in the hard-hit construction sector by leveraging existing funds within existing programs.

Over the last year, the political and economic forces that prompted the sponsors to develop the 2010 Report have only intensified. Concerns over the Federal budget deficit and the national debt have come to dominate the current legislative session, and the impending presidential and congressional elections have made bipartisan cooperation in Congress even more difficult to achieve. Against this backdrop, the prospects for significant new legislation on building energy efficiency or sustainability—particularly legislation requiring new appropriations—appear bleak. Meanwhile, there remains an urgent need to stimulate job creation in the buildings sector and modernize the nation’s building stock. Executive action based on existing legal authorities remains the most promising avenue for progress at the Federal level.

Recognizing the need for continued evaluation of existing legal authorities, a new group of partners convened in March 2011 and commissioned this update to the 2010 Report. This updated 2012 report has two broad objectives. First, this updated report assesses notable developments—both positive and negative—relating to suggested opportunities addressed in the 2010 Report. Second, this report expands upon the 2010 Report by proposing additional opportunities to use existing legal authorities to promote an aggressive efficient and sustainable buildings agenda.

2012 SPONSORS

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THE REAL ESTATE ROUNDTABLE
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¹ Sponsors of the 2010 Report included: The Real Estate Roundtable; UDR; Johnson Controls, Inc.; the Energy Foundation; Building Owners and Managers Association International; the American Institute of Architects; Sheet Metal and Air Conditioning Contractors’ National Association; National Housing Conference; Natural Resources Defense Council; International Facility Management Association; Energy Future Coalition; and C3.

² Available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=7187>.

This section of the report offers a brief overview of our key findings, including both major developments since spring 2010 as well as a summary of critical policy options for the Administration going forward. Parts III and IV of this report provide detailed discussions that respectively address the two broad aims of this report. Specifically, Part III offers a detailed program-by-program review of how Federal agencies have used the authorities covered in the 2010 Report to promote energy efficiency and sustainability over the last year. Where appropriate, Part III also provides an evaluation of these developments and options for future action. For sake of brevity, Part III does not review every program that was included in the 2010 Report, but rather focuses on those programs that appear to have seen the most significant developments. Part IV expands upon the analysis in the 2010 Report by presenting additional legal authorities and policy options that were not covered in the 2010 Report; for each program reviewed in Part IV, the relevant statutory basis for action is explained and known limitations on policy options are identified.

For economy of discussion, this report generally does not reiterate policy options presented in the 2010 Report, nor does it repeat background information from last year’s report on the legal structure and limitations of individual programs. However, the options in the 2010 Report remain as worthy of consideration today as when they were first proposed.

A. DEVELOPMENTS OVER THE LAST YEAR

Since April 2010, the organizations that participated in the production of the 2010 Report have used that document to advocate for positive change both within Federal agencies and at the highest levels of the Administration. Advocates particularly directed the Administration’s attention to “low-hanging fruit”—policies that could have broad impact on a large array of buildings with relatively minor commitments of administrative effort.³ The Obama Administration took a number of actions over the last year to advance efficiency and sustainability objectives within the programs identified in the 2010 Report. Major developments in this regard include:

- **The Better Buildings Initiative.** In February 2011, the Obama Administration announced a major new package of legislative and policy proposals, known as the “Better Buildings Initiative” (BBI), to achieve a 20% improvement in the energy efficiency of commercial buildings by 2020. Several elements of the BBI echoed policy options offered in the 2010 Report, including a proposal in the Department of Energy’s (DOE) FY2012 budget to make the existing 179D tax deduction for commercial buildings more robust and usable for greater real estate stakeholders; and FY2012 request to provide loan guarantees for energy efficiency retrofits at universities, hospitals and commercial buildings; and a Small Business Administration (SBA) initiative to encourage the use of SBA loans for small business energy efficiency retrofits. The Administration also proposed structural reforms to the existing commercial buildings tax deduction.⁴

3 See Letter to President Barack Obama from the Alliance to Save Energy, American Council for an Energy-Efficient Economy, Conservation Services Group, Direct Energy, Energy Future Coalition, Environment America, Federal Performance Contracting Coalition, Hannon Armstrong, Interfaith Power and Light, Johnson Controls, National Association of Energy Service Companies, National Association of State Energy Officials, Natural Resources Defense Council, Rebuilding Together, Southern Alliance for Clean Energy, Union of Concerned Scientists, and the U.S. Green Building Council (March 15, 2011) (emphasizing opportunities for Federal banking regulators to reform property appraisal standards; for the Department of Energy to support energy efficiency building retrofits using loan guarantees under Title 17 of the Energy Policy Act of 2005; and for the Federal Housing Administration, Fannie Mae, and Freddie Mac to utilize data on energy expenditures in underwriting and insuring mortgages); see also U.S. Green Building Council, Natural Resources Defense Council, Johnson Controls, and Real Estate Roundtable, *Energy Efficiency in Commercial Buildings: Top Priorities for the Obama Administration Using Existing Authorities* (January 21, 2011) (advocating Federal support for “green” appraisal standards, streamlining of the section 179D commercial buildings tax deduction, and Title 17 loan guarantees for energy efficient building improvements).

4 The White House, *President Obama’s Plan to Win the Future by Making American Businesses More Energy Efficient Through the “Better Buildings Initiative”* (Feb. 3, 2011).

- **Commercial Building Asset Rating Program.** In August 2011, DOE announced plans to develop a pilot program for owners and operators of new and existing commercial buildings to voluntarily rate the as-built energy efficiency of their facilities according to nationally uniform criteria. DOE has assured stakeholders there will be opportunities to pilot the program before it is implemented, as some have raised concerns regarding the added value of the proposed Asset Rating over current voluntary programs.
- **MOU on Appraisal Standards for Energy Efficient and Sustainable Properties.** Consistent with one of the recommendations of the 2010 Report, the DOE executed a memorandum of understanding (MOU) with the Appraisal Foundation, which maintains widely-used professional appraisal standards, aimed at encouraging guidance and professional training on the proper valuation of energy efficient and sustainable buildings. While the MOU's execution in June 2011 was an important first-step in elevating the importance and need for a "green appraisal" standard, since that time further additional progress in developing a green appraisal standard has not been apparent to real estate and efficiency advocates.
- **Multifamily Green Initiative at Fannie Mae.** Fannie Mae Multifamily has launched a Green Initiative whose most significant activities include the establishment of an innovative risk-sharing partnership with the Federal Housing Administration (FHA) to provide additional capital on favorable terms for multifamily green retrofits; incorporating energy and water efficiency measures into "physical needs assessments" used by lenders and property owners to plan maintenance and repairs over the duration of the loan term; and partnering with EPA on the ENERGY STAR program to explore the development of a numerical energy performance rating system for multifamily properties.
- **Incentivizing Energy Efficiency and Sustainability Through Funding Announcements.** Consistent with one of the key themes of the 2010 Report, energy efficiency and/or sustainability criteria have begun to be incorporated as key scoring criteria in Notices of Funding Availability (NOFAs) for several major Federal housing programs, including USDA's Section 514, 515, 516, 538, and Multifamily Preservation Revitalization Demonstration grant programs; HOPE VI/Choice Neighborhoods; and HUD's Section 202 and 811 supportive housing programs (which incorporates minimum energy efficiency standards and provides additional "points" for applications meeting certain sustainability criteria). USDA's Section 515 NOFA provides particularly strong incentives in this regard, offering 67 points (out of a possible total of 152) for energy efficiency, sustainability, and on-site renewable energy generation.
- **Strengthened Energy Efficiency and Sustainability Requirements.** Minimum energy efficiency standards were established or strengthened within several Federally-assisted housing programs, including the Section 202 and 811 supportive housing programs, HOPE VI, and public housing receiving Section 9 capital funds. In addition, DOE moved forward with the implementation of fossil fuel consumption standards and sustainability requirements for Federal buildings.
- **Continued Progress in Strengthening Product Efficiency Standards.** DOE proposed or finalized new efficiency standards for a number of product categories over the last year, and has also undertaken programmatic reforms directed at ensuring consistent compliance with and rigorous enforcement of all product efficiency standards.
- **Stepped Up DOD Commitment to Reducing Energy Consumption and Promoting Sustainability.** The Department of Defense (DOD) and the Army, Navy, and Marine Corps all issued strengthened energy efficiency and sustainability standards in 2010. In addition, the Army, Navy, and Marine Corps adopted aggressive initiatives to achieve "net zero" energy consumption at their bases over the next ten years.
- **Rental Policy Working Group.** In 2010, the Administration convened an interagency working group with representatives from the Department of Housing and Urban Development (HUD), the U.S. Department of Agriculture (USDA), and the Department of the Treasury to coordinate policies and requirements related

to Federally-assisted housing. One of the expected outcomes of this process is a “green physical needs assessment” that will provide owners of Federally-assisted housing with information and recommendations on cost-effective energy efficiency and sustainability investments that can be made over time.

- **Sustainable Communities Initiative.** In 2010, HUD awarded its first round of grant funding under the Sustainable Communities Initiative, which supports local and regional planning and capacity-building efforts to promote sustainable, affordable housing and transportation options.

To be sure, many of these initiatives require additional administrative action to be fully implemented and, in some cases, are in need of substantial refinement or improvement. Dozens of opportunities that we identified in last year’s report also apparently remain untapped. Nonetheless, the initiatives undertaken in the last year reflect innovative approaches to existing legal authorities as well as meaningful progress on a variety of fronts. These developments are a promising indication that the Administration is reorienting Federal policy to prioritize building energy efficiency and sustainability.

B. NEW OPPORTUNITIES FOR ENHANCING ENERGY EFFICIENCY AND SUSTAINABILITY

Many of the existing legal authorities that were discussed in the 2010 Report remain to be implemented, and continue to present exciting opportunities for the Executive Branch to advance the transformation of the nation’s building sector. As an extension of this effort, Part IV of this report discusses new opportunities that the sponsors have identified since the publication of the 2010 Report. These opportunities include:

- **Facilitate a Voluntary Residential Building Labeling Program.** A nationally-recognized, consumer-friendly energy efficiency label for residential buildings could have the same impact in the market for real estate that the ENERGY STAR label has had in the market for commercial buildings. DOE could accelerate the development of such a label by building on its existing E-Scale pilot program, and the Federal Trade Commission (“FTC”) could facilitate the adoption of such a label by clarifying its regulations on certifications and “green” product claims.
- **Integrate Energy, Water, and Location Efficiency Into Mortgage Underwriting Standards.** Energy, water, and transportation expenses can greatly influence the affordability of both single-family and multifamily properties. The Consumer Financial Protection Bureau (“CFPB”) should evaluate whether these factors should be considered by mortgage originators in determining a borrower’s ability to pay.
- **Revive Federal Use of Energy Savings Performance Contracting.** Energy savings performance contracts (“ESPCs”) help agencies upgrade their facilities to meet modern efficiency standards, while paying for the improvements over time out of their energy savings. The government’s large building inventory presents potentially billions of dollars in cost-effective, energy-saving retrofit opportunities. To ensure that ESPCs and similar arrangements are fully exploited, the Executive Branch could direct OMB to encourage use of ESPCs through its oversight of agency capital investment plans; provide incentives for procurement officials to explore ESPCs as one vehicle for financing capital improvements; and designate staff within OMB or other White House offices to be responsible for ESPC initiatives.
- **Promote Energy Efficiency and Sustainability Through the Economic Development Administration.** There is considerable scope for the Department of Commerce’s Economic Development Administration (“EDA”) to integrate energy efficiency and sustainability into its programmatic plans and funding activities for infrastructure improvements in economically challenged communities.

- **Strengthen Energy Data Collection Programs for Large Buildings.** The systematic collection of detailed data on building energy characteristics and performance is critical to informing the development of future standards, monitoring progress, and enabling objective comparisons of buildings. Federal guidance to the utility community on how it can provide whole-building energy consumption data in multitenant assets can help address barriers to building benchmarking and energy performance in those structures. Likewise, the Energy Information Administration (“EIA”) has significant authority to supplement the CBECS survey through additional requests for information from owners and occupants of large buildings.
- **Establish Federal guidelines on economic valuation of green buildings.** As discussed in EO 13514, a full accounting of costs and benefits should be undertaken on building-scale efficiency improvements. Based on the successful experience of Department of Transportation’s Transportation Investment Generating Economic Recovery (“TIGER”) grant program, guidance should be established for measuring the dollar value of energy efficiency and other benefits (such as: reduced energy and water consumption, GHG reduction, improved indoor air quality, reduced waste material, etc.). With such guidelines, physical performance (i.e. % reduction in energy use) can be computed in dollar terms to more directly represent long term financial and public value. These guidelines can then be integrated with recommendations to improve competitive grant programs of HUD, DOC, DOE and others, as well as supplement existing agency-level sustainability rating systems that are tracked by OMB.

The sponsors of this report hope that the Administration will review and consider the new opportunities discussed in Part IV, together with the policy options presented in the 2010 Report.

C. CONCLUDING OBSERVATIONS

This report paints a mixed picture of both promising progress and unfulfilled potential. Our review of last year’s developments demonstrates that in certain key areas of the Federal government—especially programs administered by HUD, DOD, and USDA—there is a demonstrated commitment to using existing legal tools to improve building energy efficiency and sustainability. In some cases agencies have exceeded expectations by moving aggressively and diligently to reform their programs, and by pursuing innovative opportunities that the sponsors of this report did not foresee in the 2010 Report. These steps validate the central premise of the 2010 Report: that meaningful progress can be made on an ambitious efficiency and sustainability agenda even in a climate of congressional gridlock and extreme fiscal austerity.

However, as noted throughout this report, in some cases these promising initiatives are still nascent and require sustained work and attention to be fully implemented. Furthermore, much more could be done: the Administration’s achievements over the last year represent only a portion of the opportunities identified in the 2010 Report for improving building energy efficiency and sustainability through use of existing legal authorities. In addition, in important areas such as appliance standards and building codes, the Administration has demonstrated a high level of commitment but may need to resist pressure to reduce the level of administrative resources and attention devoted to those programs. While recognizing and commending the encouraging developments described in this report, the partners urge a broadening and deepening of the Administration’s commitment to vigorous use of existing legal authorities.

The partners hope that this report, like the 2010 Report, will serve as a valuable resource and inspiration for advocates—both internal and external to the Administration—who are committed to improving the energy efficiency and sustainability of the nation’s building stock.

Disclaimer: Like the 2010 Report, this report reflects extensive input both from the sponsors of this project and from key agency officials who generously agreed to meet with the authors to share their expertise and insights. These contributions reflected a diversity of views both as to the extent of existing legal authorities and the ways in which that authority should be used. Neither the partners nor other contributors to this report have endorsed any of the specific policy options advanced herein.

III. DEVELOPMENTS RELATING TO AUTHORITIES IDENTIFIED IN THE 2010 REPORT

FANNIE MAE AND FREDDIE MAC

Agency:	Federal Housing Finance Agency (FHFA) Federal National Mortgage Association (Fannie Mae) Federal Home Loan Mortgage Corporation (Freddie Mac)
Program:	-
2010 Synopsis:	<p>Fannie Mae and Freddie Mac (collectively known as the “Government Sponsored Enterprises” or “GSEs”) both play a dominant role in the secondary market for residential single family mortgages and for commercial mortgages on multifamily rental properties. By setting the eligibility criteria for mortgage purchases, the GSEs also exert considerable influence over underwriting and appraisal standards for residential mortgages. Our 2010 Report suggested that the GSEs use their influence to support the financing of buildings with energy efficient and sustainable features. Specifically, we encouraged the GSEs to consider developing programs—similar to Freddie Mac’s \$1 billion partnership with the Community Preservation Corporation to finance energy efficiency retrofits in multifamily properties—to purchase mortgages on properties meeting minimum energy efficiency, water efficiency, and other sustainability criteria. We also proposed that the GSEs develop model underwriting guidelines for energy efficient and sustainable properties that properly value the cost savings and enhanced appreciation such properties typically carry. Lastly, we noted that FHFA and the GSEs could require that every mortgage they purchase carry a standardized disclosure of energy efficiency and sustainability characteristics. Such standardized provision of data is essential to ensuring that buyers are able to adequately assess and value the energy efficiency and sustainability features of their properties.</p>
Developments:	<p>1. <i>“Green Refinance Plus” Program With FHA.</i> In May 2011, HUD Secretary Shaun Donovan and Fannie Mae Multifamily Executive Vice President Ken Bacon announced “Green Refinance Plus,” an enhancement to the existing Risk Sharing program between FHA and Fannie Mae.⁵ The enhancement allows properties with an affordability component to obtain up to an additional 5% in loan proceeds for energy and water efficiency property improvements and</p>

⁵ HUD, Green Refinance Plus Program (May 2011), available at <http://portal.hud.gov/hudportal/documents/huddoc?id=GreenRefiPlusFactSheet.pdf>

cost saving opportunities. A green Physical Needs Assessment (PNA) report, described below, will identify these improvements and opportunities for the owner to select and implement. The additional 5% of loan proceeds is backed by additional mortgage insurance from FHA.

2. *Inclusion of Energy and Water Efficiency Measures in Fannie Mae's Multifamily Physical Needs Assessments.* Fannie Mae has included in its Delegated and Underwriting Servicing (DUS) Guide a scope of work for the delivery of green PNA reports for multifamily properties seeking financing. A PNA is an assessment of present property condition and a plan for short-term and long-term capital investment and maintenance needs, adherence to which is an enforceable condition of mortgages on multifamily and commercial properties. As a result, the contents of a PNA have a powerful impact on how multifamily and commercial buildings are operated and maintained over time. The green PNA was introduced in July 2011 in conjunction with the Green Refinance Plus product enhancement.⁶ These standards are expected to affect a large universe of properties, given that Fannie Mae's portfolio includes 25% of the mortgages on multifamily properties in the United States.⁷

3. *Fannie Mae Partnership With the ENERGY STAR Program and Development of Multifamily Industry Data Taxonomy.* Fannie Mae has partnered with EPA to contribute to the development of a 1-to-100 ENERGY STAR energy performance rating system for multifamily properties. Fannie Mae's participation in this effort includes developing a multifamily industry standard taxonomy of property and energy data elements (such as year built, number of units, square footage of units, etc.). This standard taxonomy is being developed in partnership with many multifamily industry associations and partners including Enterprise Community Partners, MacArthur Foundation, Stewards of Affordable Housing, and others. The ENERGY STAR multifamily rating system is expected to be launched in 2013 along with a comprehensive update of the entire ENERGY STAR online system.

4. *Fannie Mae Provides Incentives for Energy Improvements in Single-Family Properties.* Fannie Mae announced in December 2010 that it was revising its guidance to mortgage sellers to incentivize the use of mortgage proceeds for energy efficiency improvements at existing single-family properties. This "Energy Improvement Feature" would allow borrowers to obtain a \$250 credit to complete an energy audit prepared by a Home Energy Rating Systems (HERS) rater, and use loan proceeds to carry out energy efficiency improvements in an amount of up to 10% of the appraised value of the property.⁸

5. *PACE Programs Impeded.* In 2010, FHFA and the GSEs issued determinations that severely constrained the market for property-assessed clean energy (PACE) bonds, a vehicle for financing cost-effective energy efficiency improvements in residential (and commercial) properties. Some PACE programs have enabled property owners to obtain low-cost financing for energy efficiency improvements, usually in the form of bonds or similar financing vehicles that are generally backed by property tax assessments. PACE bonds may help owners reduce

6 Fannie Mae, *Green Refinance Plus: Green Physical Needs Assessment Statement of Work and Contractor Qualifications* (July 2011), available at http://image.exct.net/lib/feefi3797d6701/m/1/FannieMae_Green_PNA_SOW_070811.pdf

7 Fannie Mae's green PNA is directly based on an analogous instrument developed by HUD. As discussed further below, HUD initially developed the "green PNA" concept for use in the Green Retrofit Program funded by the Recovery Act, and plans to extend the concept to a broader set of HUD-assisted facilities.

8 Fannie Mae, Announcement SEL 2010-15, New Energy Improvement Feature and Other Related Updates (Dec. 1, 2010).

their energy bills and energy-related carbon emissions, generating financial savings that allow them to repay the cost of the improvements. PACE-related property tax assessments, like other property taxes, are typically structured to have first lien priority over mortgages in the event that the owner defaults, and therefore create additional risk for mortgage holders. However, the GSEs in the past have not challenged similar special tax assessments for local infrastructure improvements (such as streetscaping, lighting, and water/sewer systems).

Despite these precedents and the Administration's attempts to work with FHFA on concerns related to PACE, both of the GSEs warned financial institutions in May 2010 that PACE bonds violate standard mortgage provisions by according a first lien priority to the holder of the bond.⁹ FHFA itself issued a statement in July 2010 reaching the same conclusion, and additionally determined that PACE bonds create unacceptable risks for mortgages held by the GSEs.¹⁰ These actions by FHFA and the GSEs have essentially halted the issuance of PACE bonds for residential properties. Some commercial properties have continued to explore PACE financing programs.¹¹

Options:

1. *Consider Efforts That Could Revive PACE Financing.* A full discussion of the actions taken by FHFA and the GSEs with regard to PACE bonds is beyond the scope of this report. However, PACE programs could significantly encourage retrofit projects in the residential and commercial building markets if properly implemented and with appropriate safeguards to respect the interests of mortgage lenders, retrofit financiers, and borrowers. Indeed, savings resulting from energy efficiency investments may enhance the ability of a borrower to service a mortgage and offset the risk associated with the prior lien. FHFA and the GSEs should work constructively with the lending community and the Administration to improve PACE programs with underwriting safeguards that are consistent with maintaining the financial integrity of residential and commercial mortgages. The Administration could convene leading stakeholders to determine whether there are any appropriate circumstances where the lender on a first mortgage could consent to a superior interest of a second-in-time PACE lien, or whether the risks of a secondary PACE lien could be mitigated while maintaining the prime position of a first mortgage.

2. *PACE-Specific Loan Guarantee.* In coordination with the Department of Energy (DOE), Fannie and Freddie should develop a credit enhancement platform under DOE's existing Title XVII loan guarantee authorities specifically geared to overcome the nettlesome lien priority issues that impede success of most PACE programs. Retrofit assessments backed by DOE could help mitigate risks and encourage municipal and other investors to accept a subordinated PACE lien. Likewise, a DOE loan guarantee supporting a PACE retrofit lien may be a significant factor to encourage pre-existing mortgagees to consent to prime position for a PACE lien -- particularly in the commercial properties context. Such a PACE-focused loan

9 Freddie Mac, *First Lien Mortgages and Energy Efficient Loans (Industry Letter)* (May 5, 2010), available at <http://www.freddiemac.com/sell/guide/bulletins/pdf/1ltro50510.pdf>; Fannie Mae, *Lender Letter LL-2010-06* (May 5, 2010), available at <https://www.efanniemae.com/sf/guides/ssg/annltrs/pdf/2010/111006.pdf>.

10 Federal Housing Finance Agency, *FHFA Statement on Certain Energy Retrofit Loan Programs* (July 6, 2010). On the same day, the Office of the Comptroller of the Currency (OCC) alerted the lenders it regulates of FHFA's actions, and recommended that OCC-regulated lenders take precautionary measures to protect their balance sheets against PACE bonds. Office of the Comptroller of the Currency, *OCC 2010-25* (July 6, 2010).

11 See Justin Gillis, *Tax Plan to Turn Old Buildings 'Green' Finds Favor*, N.Y. Times Sept 19, 2011.

guarantee also has opportunities to bring the retrofit market to scale, as multiple properties suitable for energy efficiency upgrades—that fall within a jurisdiction that authorizes retrofit tax assessments—can be aggregated so as to warrant DOE’s involvement. As a concrete step to effectuate this concept, DOE should develop a project solicitation announcement¹² for issuance to municipal investors and other retrofit financiers to identify projects and jurisdictions where federal credit support can work to finally bring PACE financing concepts to a point of success.

3. *Estimate Energy, Water and Transportation Expenses for Underwriting.* Energy, water, and transportation are three major expenses that contribute to the affordability of single-family, multifamily, and commercial properties alike.¹³ However, these factors are presently overlooked by originators of mortgage loans and by the GSEs, whose underwriting standards determine or influence those applied by originators. Accordingly, the GSEs may consider reforming their underwriting guidelines to include estimates of energy, water and transportation expenses. These estimates may be based on a combination of modeling assumptions, data on the energy efficiency characteristics of the property (for example, utility bills or Home Energy Rating System (“HERS”) scores, where available), and questions regarding a borrower’s distance from employment. Over time, the integration of these factors into mortgage underwriting may allow the lending community to develop a deeper understanding of the relationship between mortgage integrity and the efficiency and sustainability of real estate. Internalizing this information into the pricing and approval of mortgages could also encourage buyers to seek out more location and energy efficient properties.

4. *Harmonization With Freddie Mac.* Freddie Mac should consider adopting a green PNA for multifamily and commercial properties that is comparable to the green PNAs being developed by Fannie Mae and the Rental Policy Working Group; engage in risk-sharing agreements comparable to the Green Refinance Plus program launched by FHA and Fannie Mae; and approach the Administration to provide appropriate support for the development of an ENERGY STAR or other voluntary building rating and labeling program.

REFORM OF APPRAISAL STANDARDS

Agency: Department of Energy

Program: Building Technologies Program

Developments: One of the key proposals in the 2010 Report suggested that Federal banking regulators adopt appraisal standards and guidance that ensure the proper valuation of energy efficient and sustainable building features. As noted in the report, such standards would help ensure that the inherent economic value of such features is recognized and monetized by building developers and owners.

¹² As an example of a DOE loan guarantee solicitation, see <http://lpo.energy.gov/wp-content/uploads/2010/09/sol-08-12-10.pdf>.

¹³ See, e.g. Center for Neighborhood Technology, *Housing + Transportation Affordability in Washington, DC* (July 2011) (finding that transportation costs have outsized influence on the affordability of housing in the Washington, DC metro region).

Although Federal banking regulators do not appear to have taken any actions on this proposal in the last year, DOE executed a memorandum of understanding (MOU) with the Appraisal Foundation in June 2011 that could help accomplish the objectives identified in the 2010 Report.¹⁴ Under the MOU, the DOE has committed to provide the Appraisal Foundation with a course curriculum to be used for training appraisers in valuing energy efficiency and sustainability features of real property, and will develop databases to aggregate information on building performance. The Appraisal Foundation, in turn, will engage its professional standards committees to consider the issuance of guidance and standards for appraisals of energy efficient and sustainable properties.

Because the appraisal standards adopted by Federal banking regulators must, by law, be no less stringent than the Appraisal Foundation's USPAP,¹⁵ this MOU could ultimately lead to a revision of the appraisal standards applicable by regulation at all U.S. lending institutions.

Options:

1. *Commit to Issuing a Progress Report in 2011.* Although this MOU is an important first step towards reforming appraisal standards, the MOU itself provides little clarity as to the specific milestones and timelines that DOE expects to meet. To ensure that the MOU is actively implemented and promote the transparency of this initiative, DOE and the Appraisal Foundation should commit to issue a progress report by March 2012 that describes specific efforts undertaken pursuant to the MOU, key efforts under way, and specific near-term plans and objectives. As appropriate, DOE and the Appraisal Foundation should also provide subsequent progress reports on a regular basis.

2. *Solicit Public Participation and Input in MOU Activities.* A number of organizations—many of them sponsors of this report—have developed significant expertise with respect to the benefits and economic value of energy efficient and sustainable properties. In carrying out MOU activities, DOE and the Appraisal Foundation should provide well-advertised opportunities for public participation and input. For example, DOE and the Appraisal Foundation could sponsor technical conferences on proposed curricula for training of appraisers, and subject new guidance or appraisal standards to public comment.

PROGRESS ON COMMERCIAL BUILDING TAX GUIDANCE

Agency: Department of Treasury

Program: 179(d) Energy Efficient Commercial Building Tax Deduction

Developments: As part of the Obama Administration's Better Buildings Initiative, in December 2011 the White House tasked the Department of Treasury and Department of Energy to issue guidance on claiming partial deduction for specific systems.

14 See Memorandum of Understanding Between the Appraisal Foundation and the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (June 10, 2011), available at http://www.eere.energy.gov/pdfs/doe_taf_mou_signed_6-10.pdf. The Appraisal Foundation is a Congressionally-recognized nonprofit organization that issues standards of conduct and minimum qualifications for professional appraisers. The Appraisal Foundation's Uniform Standards of Professional Appraisal Practice (USPAP) prescribe required procedures and practices for real estate appraisals.

15 12 U.S.C. § 3339.

Options:

1. *Provide Guidance on Partial Deduction for Specific Systems:* Section 179(d) allows a “partial deduction” of \$.60/sf for a “system” that meets “energy savings targets” established by the IRS.¹⁶ Specifically, the systems are installations for interior lighting, HVAC, hot water, and envelope. Unlike the full \$1.80/sf deduction, the partial deduction for specific systems does not re-quire costly software modeling. Regulations from IRS/DoE—as expressly required by the tax code¹⁷—are needed to clarify a prescriptive approach to meet the specific system savings targets that do not depend on computer modeling. Again, informal guidance issued to date has not generated use of partial allowances outside of lighting upgrades.¹⁸ To encourage uptake of the partial deduction outside of lighting upgrades, IRS/DOE should issue guidance that avoids expensive performance modeling but rather instructs which particular pieces of high-efficiency heating, cooling, and building envelope materials and equipment should be installed that would meet existing savings targets already announced for those systems.

2. Simplify 179(d) performance modeling and make it more cost efficient, DoE/IRS by:

Computing projected energy savings based on California method: The very text of section 179D states that IRS/DoE “shall promulgate regulations which describe in detail the method for calculating and verifying energy power consumption and costs, based on ... the 2005 California Nonresidential Alternative Calculation Method Approval Manual.”¹⁹ In a letter dated November 25, 2009 to Senator Olympia Snowe (R-ME), the IRS acknowledged it had “not yet issued regulatory guidance under section 179D” but rather offered that a series of piecemeal notices were effectively the practical equivalent of regulations.²⁰ These informal efforts have clearly not catalyzed interest or clarity in the marketplace regarding 179(d). Final and more detailed regulations explaining the computation methodology of the California ACM should be issued—a clear mandate from Congress—that set forth a clear, step-by-step, “how to” approach laying forth the process to compute energy savings.

“Reference Building” software: Section 179(d) states that energy savings calculations must be prepared by “qualified computer software.”²¹ As per the California ACM manual, the IRS should also require that qualified modeling software automatically generate the “reference building” against which energy savings are measured. In short, software should allow a building owner seeking the deduction to compare energy use to the ASHRAE reference building. Software meeting this requirement would save considerable time and effort for potential applicants. To further assist applicants seeking the deduction, the qualified software should also provide uniform regional energy cost assumptions for use in estimating building energy savings. Moreover, as one of the sources for modeling guidance that can be used to establish eligibility for the 179(d) deduction, DoE can announce its approval of the guidelines offered by the Commercial Energy Services Network (COMNET).²²

16 26 U.S.C. § 179D(d)(1)(A)(ii).

17 Id. § 179D(d)(1)(B).

18 See November 25, 2009 letter to Senator Snowe, fn. 17.

19 26 U.S.C. § 179D(d)(2).

20 Available at www.irs.gov/pub/irs-wd/09-0226.pdf.

21 26 U.S.C. § 179D(d)(3).

22 See <http://www1.resnet.us/comments/comnet/>

VOLUNTARY BUILDING RATING

Agency: Department of Energy

Program: Commercial Building Asset Rating Program

Developments: The 2010 Report emphasized the importance of developing systems that would allow owners and users of commercial and multifamily buildings to easily evaluate and compare building energy efficiency performance. The 2010 Report suggested that the existing ENERGY STAR labeling program could be expanded and adapted for this purpose.

In August 2011, DOE issued a request for information (RFI) to develop a new “Commercial Building Asset Rating Program.” According to the RFI, DOE intends that the Asset Rating Program will develop a nationally applicable energy efficiency rating system that will allow any owner or operator of a commercial building to evaluate the as-built, designed characteristics of that structure. In contrast to the existing Portfolio Manager system used in the ENERGY STAR program, which is based primarily on historic utility bill data, the Asset Rating Program will assess the characteristics of a building “as built” (that is, independent of the occupant behavior or operating performance of the particular building being rated) based on a combination of user-provided data and assumptions regarding building usage.

Options: *1. Continue to Involve Stakeholders in Design of Asset Rating Program and Establish Reasonable Timeline for Completion.* The success of this effort will require careful consideration of many complex technical and methodological issues. The involvement of the public, and especially those stakeholders who will ultimately use the Asset Rating Program, is vital to ensuring that these issues are resolved appropriately.

As of this writing, DOE held a workshop from December 8-9, 2011 on its Initial program design. DOE staff, consultants, and stakeholder participants all recognized that the usefulness of the AR Program will depend heavily on real-world piloting and case studies in actual buildings. DOE should continue its path forward in working closely with stakeholders in shaping and executing meaningful pilot programs, and should not feel compelled to rush any new rating platform to market until its contemplated designs is adequately and thoroughly tested in the field.

2. Ensure Value Beyond and Consistency with ENERGY STAR Platforms. The RFI states that any new tool developed under the Asset Rating Program will be consistent with the Portfolio Manager tool in the ENERGY STAR program. As became apparent at the December 2011 workshop, a given building’s control parameters, when input into both the Portfolio Manager and contemplated AR tools, can yield differing results in terms of information provided at the end of each process for key metrics like energy usage intensity and greenhouse gas emissions. Given that EPA estimates that approximately 250,000 buildings have measured energy consumption using Portfolio Manager, DOE should demonstrate how any new Asset Rating tool will be consistent with the industry’s most widely accepted and used benchmarking platform. Additionally, DOE states that the Asset rating program will not replace the need for a comprehensive building audit or retrocommissioning, but can provide building owners with a high-level review of “problem areas” in an asset that could benefit from capital improvements—a function already provided by ENERGY STAR and Portfolio Manager. DOE

should explain how its planned new program provides additional benefits and values above and beyond ENERGY STAR tools and platforms. In addition, DOE should consider and explain to stakeholders how the Asset Rating Program will avoid confusion with ENERGY STAR. It is thus critical that DOE work closely with ENERGY STAR staff and the real estate community to understand and scrutinize both the similarities and differences between the information generated by both the AR tool and Portfolio Manager. As part of piloting efforts, particular buildings, across a range of types and climate zones, should be subject to both the AR tool and Portfolio manager processes for close comparison.

3. *Design the Asset Rating to Accurately Convey Information.* DOE should avoid using the as-built asset rating to make predictions about actual energy consumption, as DOE suggested it might do in the RFI. An as-built rating inherently relies upon assumptions regarding standard building operating conditions, and cannot generate reliable predictions about energy consumption in practice. To present the asset rating as a tool for predicting energy consumption could contribute to public confusion and undermine the credibility of the Asset Rating Program. To the extent that asset ratings are used as the basis for predictions, DOE should provide a *range* of potential outcomes rather than a single firm forecast of energy consumption.

4. *Examine Experiences with Asset Ratings Abroad.* Various EU member nations, the United Kingdom, and Australia have some experiences with ratings that are both asset-based, and performance-based. Before DOE rolls out a new Asset Rating Program to the market, it should carefully study the experiences from these other countries to understand whether and how to implement the as-built rating program that it presently contemplates.

5. *Develop economic valuation metrics on Asset Ratings.* Consistent with the comment in Section II.B., economic valuation of the physical measures that would be captured by an Asset Rating system would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. DOE should conduct analysis that explains how any proposed Asset Rating Program will translate into real “dollars and cents” in the marketplace, such as by impacting property values, rents, and occupancy rates.

RENTAL POLICY WORKING GROUP

Agency: Department of Housing and Urban Development (HUD)

Department of Agriculture (USDA)

Department of Treasury

Program: HUD and USDA affordable housing programs

Low Income Housing Tax Credit (LIHTC)

Developments: A significant new development in federal affordable housing policy in 2010 was the formation of an interagency Rental Policy Working Group (RPWG) led by the White House Domestic Policy Council and composed of representatives from HUD, USDA, and Treasury. The

mission of the RPWG, which has been meeting since July 2010, is to coordinate and harmonize a number of federal policies affecting federally-assisted rental housing—with the aim of reducing compliance burdens for properties participating in multiple programs and subject to multiple sets of regulatory requirements promulgated by different agencies.

The working group is expected to produce at least two new policies aimed at improving energy efficiency and sustainability in the federally-assisted housing stock. The first policy is a common set of energy efficiency standards that would apply across all properties receiving assistance from HUD, USDA or Treasury. According to a proposal made public in July 2011, these standards would require new construction financed with Federal grants to meet or exceed ENERGY STAR or Builder’s Challenge Quality Criteria. New construction supported by Federal insurance or loan guarantees would be required to meet or exceed the most current IECC or ASHRAE standards. “Substantial” rehabilitations and minor rehabilitations would be required to implement less stringent efficiency improvements (in the case of substantial rehabilitations, properties would be required to implement measures identified as financially feasible in a “green” capital needs assessment, discussed further below).²³

The second policy is a universal procedure for recognizing energy efficiency and sustainability features in capital needs assessments (CNAs) for federally-assisted properties. Most entities receiving federal housing assistance are already required to carry out CNAs on a periodic basis in order to prioritize and plan for maintenance and capital improvements. The working group intends to improve upon this process by developing a uniform green CNA, similar to the green PNA developed by HUD for the Green Retrofit Program, that allows property owners to easily calculate the long-term life-cycle costs of implementing key energy efficiency and sustainability features. According to a white paper issued in July 2011, the CNA may also incorporate energy audit and data collection requirements.²⁴ Although the CNA does not require property owners to implement any particular feature or set of features, it does heavily influence the investment decisions of property owners. A green CNA could prove to be a useful tool for educating property owners on the variety of energy efficiency and sustainability features that can be incorporated into their properties, as well as the relative costs and benefits of these features.

Options:

1. *Move Expeditiously to Finalize RPWG Recommendations.* The RPWG has the potential to greatly benefit recipients of Federal housing assistance by ensuring clear and consistent standards across multiple programs and by raising overall standards of energy efficiency and sustainability. The RPWG should establish an aggressive timetable for implementing the energy efficiency and green CNA proposals it outlined this summer, and report regularly to the public on progress made.
2. *Promote Green CNA for Use Outside of Federally-Assisted Housing.* Normalizing the use of green CNAs across Federal housing programs would give a significant impetus to this tool for encouraging cost-effective energy and water efficiency measures. If and when a green CNA

23 Stockton Williams and Rachel Kirby, *Common Energy Efficiency Requirements* (July 2011) (“RPWG Energy Efficiency Memo”), available at http://www.huduser.org/portal/aff_rental_hsg/Common_Energy_Efficiency_Requirements.pdf.

24 Theodore Toon and Meghan Walsh, *Capital Needs Assessment* (July 2011), available at http://www.huduser.org/portal/aff_rental_hsg/Capital_Needs_Assessment.pdf.

is adopted by the RPWG, the Administration should encourage its use by the GSEs and by private lenders.

LOW INCOME HOUSING TAX CREDIT

Agency: Internal Revenue Service

Program: Low Income Housing Tax Credit

Funding: Maximum amount of total tax credit available to each state is the greater of \$2.20 per resident, or \$2,525,000.²⁵

2010 Synopsis: Noting that LIHTC is one of the largest and most widely-utilized forms of Federal assistance for multifamily affordable housing, the 2010 Report recommended that the Treasury work cooperatively with the states to encourage the inclusion of energy efficiency and sustainability criteria in the “qualified allocation plans” (QAPs) that determine how LIHTC funds are distributed to individual projects. The 2010 Report suggested that the Treasury could issue nonbinding guidance to states on this issue, or produce a “model” plan reflecting best practices for the design of QAPs that are sensitive to energy efficiency and sustainability considerations.

Developments:

1. *Treasury Review of QAPs.* A white paper released by the RPWG in July 2011 indicates that the Treasury has agreed to work with the National Council of State Housing Agencies (NCHSA) to determine how statutorily required energy efficiency considerations²⁶ are being implemented by the states in their QAPs.²⁷ The white paper also suggests Treasury will take follow-up actions based on its findings.
2. *Individual State Reform of QAPs.* Although the 2010 Report focuses on actions that could be taken by the Executive Branch, it is noteworthy that several states have reformed their QAPs to incentivize more energy efficient and sustainable LIHTC projects. For example, beginning in 2010, affordable housing projects in Colorado must satisfy all of the mandatory provisions of the Enterprise Green Communities criteria in order to be eligible for LIHTC funding.²⁸ Iowa’s QAP provides significant additional “points” to LIHTC applicants that install renewable energy systems or incorporate environmentally friendly materials or designs, and requires LIHTC projects with four stories or more to exceed ASHRAE 90.1-2004 standards by at least 15%.²⁹ Treasury may consider drawing on the experiences of these and other states in promoting best practices for integrating energy efficiency and sustainability criteria into QAPs.

25 Internal Revenue Service, Rev. Proc. 2011-52 (Nov. 7, 2011).

26 As noted in the 2010 Report, QAPs are required to consider energy efficiency of eligible projects in allocating LIHTC funds. See 26 U.S.C. § 42(m).

27 RPWG EE Memo, at 2.

28 Enterprise Green Communities, *Green Affordable Housing Policy Toolkit* at 70 (July 2010).

29 Iowa Finance Authority, *Low Income Housing Tax Credit, 2011 Qualified Allocation Plan* at 24-25, 36 (2011).

SECTION 8 PROJECT-BASED ASSISTANCE

Agency: Department of Housing and Urban Development

Program: Section 8 Project-Based Assistance

Funding: \$9.3 billion appropriated for FY2012

2010 Synopsis: Benefiting over 1 million households, project-based housing assistance payments (HAPs) issued under Section 8 of the Housing Act of 1937 constitute one of the largest federal programs providing financial assistance for affordable multifamily housing. The 2010 Report suggested, among other things, that HUD: (1) provide a financial incentive for property owners invest in energy efficiency, by allowing owners to reduce the amount of rent set aside for utilities (the “utility allowance”) for tenants residing in units that have undergone energy efficiency improvements; (2) provide financial incentives for other energy efficiency or sustainability improvements in the form of increased assistance levels or returns on equity; and (3) permit property owners to make reasonable use of required reserve funds, including “reserves for replacements” and residual receipts, for approved energy efficiency and sustainability investments.

Developments:

1. *Residual receipts.* HUD is currently revising the Handbook governing residual receipts in a manner consistent with policy options presented in our 2010 Report. The new policy Handbook is expected to allow property owners greater flexibility to use residual receipts for energy efficiency retrofits and other sustainability improvements. Such drawdowns of residual receipt accounts would still require approval from regional HUD offices, and would be conditioned on additional commitments from the property owner to extend the period of affordability for the improved units.

2. *Reserves for replacements.* HUD is now encouraging owners to use Reserve for Replacement funds for energy efficiency purposes, in particular for the use of ENERGY STAR appliances.

Options:

1. *Reform Utility Allowance Calculations.* Revisions to the current regulations and guidance governing the calculation of utility allowances remains a key area for improvement in 2011. Under current practice, property owners typically compute utility allowances—which are deducted from the tenant’s share of rent paid to the property owner—based on the average performance of the buildings in the local public housing authority (PHA) portfolio. This methodology fails to reward properties that have undergone energy efficiency improvements and therefore have utility costs that fall below the average for the PHA portfolio.³⁰ If property owners were able to cost-effectively compute utility allowances that reflect lower energy expenses resulting from energy efficiency investments, they would be in a position to realize some return on those investments and would be incentivized to improve the energy performance of a larger number of properties.

There are several worthy alternatives already available for encouraging energy efficiency investment through utility allowances. For example, since 2008 the Internal Revenue

³⁰ Although PHAs are also permitted to use engineering-based techniques to compute utility allowances, PHAs frequently lack the data and technical resources required to utilize these techniques. See National Housing and Rehabilitation Association, *Incentivizing Affordable Housing Retrofits Through Utility Allowance Modernization* at 3 (January 2011).

Service (IRS) has allowed housing finance authorities to adopt an engineering-based Energy Consumption Model to determine utility allowances for properties receiving the Low Income Housing Tax Credit (LIHTC). In California, PHAs have also adopted with “energy efficiency-based utility allowance” schedules that provide standardized reductions in utility allowances based on verified improvements in the energy efficiency of a property.³¹ This alternative model requires the property owner to rehabilitate the property to a minimum level of energy efficiency performance, and obtain a professional audit certifying the performance of the rehabilitated structure. Both approaches encourage property owners to invest in energy efficiency measures by providing a mechanism for recovering the cost of those investments. At the same time, these approaches benefit tenants by (in many cases) improving the comfort of dwellings and encouraging property owners to install modern and more-reliable equipment.

HUD should revise its regulations to provide project-based Section 8 properties flexibility to calculate utility allowances that take energy efficiency features into account. IRS regulations and California’s energy efficiency-based utility allowances are useful models for such an effort. In addition, HUD could allow Section 8 properties to compute utility allowances by relying on generally accepted energy performance modeling or auditing conducted by a third-party professional.³²

2. *Ensure HAPs Do Not Disincentivize Energy Efficiency Improvements.* As HUD considers options for reforming utility allowance calculations, it should also ensure that property owners are not discouraged from investing in energy efficiency improvements through reduced HAPs. Under current practice, certain Section 8 properties that reduce their utility allowances as a result of energy efficiency investments could see their HAP payments from HUD reduced by an equivalent amount. If this were to occur, property owners would not be able to recoup the costs of energy efficiency improvements at Section 8 properties.

HUD can take steps to mitigate or avoid this outcome, especially at Section 8 properties whose contract rent is determined through a cost-based formula (as opposed to market valuation of rent). For example, HUD could issue a notice clarifying that interest on debt financing for energy efficiency improvements can be treated in the same way as other debt costs used to determine cost-based rents at Section 8 properties. Such a notice would merely be a clarification of existing practice, and would not require a change in regulation. For energy efficiency investments financed directly by the property owner, HUD could amend its regulations to provide the property owner with a reasonable return on the property owner’s equity investment. This approach would be compatible with HUD’s existing policies on calculation of contract rents, and would ensure that property owners are rewarded for making energy efficiency improvements that save energy and benefit tenants. The policy options described above also fall well within HUD’s broad discretion under Section 8 to adjust contract rents “on the basis of a reasonable formula” and to make additional adjustments in contract rent as necessary to “reflect increases in the actual and necessary expenses of owning

31 See Enterprise Green Communities, *Utility Allowance Options for Investments in Energy Efficiency: Resource Guide* (May 2011).

32 See National Housing and Rehabilitation Association, *Incentivizing Affordable Housing Retrofits Through Utility Allowance Modernization* at 4 (January 2011).

and maintaining the units which have resulted from substantial general increases in real property taxes, utility rates, or similar costs.”³³

SECTION 9 PUBLIC HOUSING FUNDS

Agency: Department of Housing and Urban Development

Program: Section 9 Capital and Operating Funds for Public Housing

Funding: \$1.88 billion appropriated to Capital Fund for FY2012 (available until Sept. 30, 2015)

\$3.96 billion appropriated to Operating Fund for FY2012

2010 Synopsis: The 2010 Report noted that HUD has discretion to recognize energy efficiency and sustainability criteria when allocating capital and operating funds for public housing, and in setting minimum design and construction standards for public housing. Specific options highlighted in the report include amending the allocation of Operating Funds to ensure that public housing authorities are not penalized when making energy efficiency investments outside the context of an energy performance contract; providing procedures to enable small PHAs to take advantage of performance contracting and other innovative financing arrangement; providing more stringent minimum property standards; and revising the allocation of Capital Funds to recognize and reward energy efficient and sustainable property improvements.

Developments:

- 1. Innovative Financing Demonstration Program for Small PHAs.* HUD is currently developing a demonstration program designed to allow small PHAs to access affordable financing for cost-effective energy efficiency improvements. Small PHAs have traditionally had difficulty obtaining finance through energy savings performance contracts, because the small scale of energy savings they can achieve does not justify the costs associated with negotiating a contract.³⁴ HUD’s demonstration project seeks to mitigate this problem by providing PHAs with a technically sound “menu” of pre-approved energy efficiency improvements with high rates of return, and connecting PHAs with lenders that are willing to finance the cost of these improvements. Participating PHAs will repay the loans through a small add-on subsidy provided through the Operating Fund (even after the subsidy, these projects will generate net savings for taxpayers by reducing operating costs). If successful, the demonstration program could eventually be extended to a broader universe of multifamily public housing projects. Although not specifically called for in the 2010 Report, this program is consistent with the spirit of the recommendations on improving small PHA access to innovative financing.
- 2. Strengthened Energy Efficiency Standards for Public Housing.* In early 2011, HUD proposed to update the minimum energy efficiency standards for public housing for the first time in almost twenty years.³⁵ Consistent with EAct 2005 and EISA 2007, the proposed standards would

33 42 U.S.C. § 1437f(c)(2).

34 Of the 2,300 small PHAs around the country (defined to include all PHAs with less than 250 units), only 24 are currently using energy performance contracts to finance energy efficiency improvements.

35 Public Housing Capital Fund Program, 76 Fed. Reg. 6,654 (Feb. 7, 2011).

require new and rehabilitated public housing to meet 2006 International Energy Conservation Code or ASHRAE 90.1-2004 standards, as applicable, and require PHAs to purchase ENERGY STAR appliances. The proposed rule would also implement EAct 2005 by adding energy efficiency measures to the list of approved uses for Capital Funds distributed by HUD.³⁶ Lastly, the proposed rule would create a procedure for PHAs to request increases in the total development cost associated with a project, if the increase is made necessary by energy efficiency, renewable energy, or sustainable construction features.³⁷

3. *New “Green PNA” and Energy Audit Requirements.* HUD’s Office of Public and Indian Housing is developing new regulations that will require all PHAs to complete physical needs assessments (“PNAs”) of their existing properties, as well as energy audits, every five years. The PNA requirement will be modeled on the successful Green Retrofit Program implemented by HUD’s Office of Affordable Housing Programs with stimulus funds under the American Recovery and Reinvestment Act of 2009, and is intended to encourage PHAs to adopt sustainable and energy efficient design features in their renovation and maintenance plans. Among other things, the green PNA will allow PHAs to easily make life-cycle cost and payback period estimates for sustainable and energy efficient building features (such as efficient appliances, windows, and light bulbs). The energy audit requirement will add considerable detail to HUD’s existing energy audit regulations,³⁸ which do not elaborate on acceptable methods and content for energy audits. A proposed rule integrating the new requirements was released in July 2011.³⁹

Options:

1. *Reward Wider Variety of Energy Efficiency Investments Through Operating Fund.* As noted in the 2010 Report, current law and regulations governing the Operating Fund provide clear incentives for the use of energy performance contracts to make energy efficiency improvements in public housing. In addition, in June 2011, HUD issued a call for public input on how to update and streamline the agency’s guidance on the use of energy performance contracts in public housing.⁴⁰ However, the regulations do not provide comparable incentives for energy efficiency improvements outside the context of an energy performance contract. HUD could revise its Operating Fund regulations, for example, to provide that PHAs that make certain energy efficiency investments will continue to receive a baseline level of operating subsidies for up to 20 years after making the investment.

PUBLIC HOUSING DEBT FINANCING

Agency: Department of Housing and Urban Development

Program: Public Housing Mortgage Program

Capital Fund Financing Program

36 *Id.* at 6,656.

37 *Id.* at 6,658.

38 24 C.F.R. § 965.302.

39 Public Housing: Physical Needs Assessment, 76 Fed. Reg. 43,219 (July 20, 2011).

40 Energy Performance Contracting — Request for Comments on Proposed Guidance and Policy Clarifications, 76 Fed. Reg. 33,329 (June 8, 2011).

Operating Fund Financing Program

2010 Synopsis:

These three HUD programs allow PHAs to take on both secured and unsecured debt to modernize and develop public housing. A potentially valuable source of financing for energy efficiency and sustainability improvements, these programs have been hindered in the past by their lengthy approval timetables and complex requirements. Our 2010 Report suggested that HUD streamline procedures for utilizing all three programs and ensure that the financial impacts of energy efficiency and sustainability measures are properly accounted for when HUD undertakes case-by-case review of financing proposals.

Developments:

HUD finalized regulations governing the CFFP in October 2010, but has decided to re-propose regulations for the OFFP and PHMP.⁴¹ Moreover, HUD issued guidance in February 2011 clarifying that PHAs may obtain non-recourse, unsecured debt financing for modernization or development of public housing without first obtaining HUD approval, and use Capital or Operating Funds to repay those debts.⁴² These new issuances should streamline the process of obtaining financing for public housing improvements. However, HUD has not taken steps to highlight the use of these programs for energy efficiency or sustainability, or provided procedures for valuing energy efficiency and sustainability features in reviewing secured financing proposals that still require HUD approval.

MULTIFAMILY ENERGY INNOVATION FUND

Agency:

Department of Housing and Urban Development

Program:

Energy Innovation Fund – Multifamily Energy Pilot

Developments:

On August 22, 2011, HUD issued a long-awaited Notice of Funding Availability (NOFA) establishing a \$25 million pilot program to award grants for innovative multifamily housing retrofits. This Multifamily Energy Pilot was originally authorized in the Consolidated Appropriations Act of 2010.⁴³

According to the NOFA, HUD will award grants for two different categories of applications — innovative financing demonstrations (such as revolving loan funds, or loans repaid through utility bills), and “applied research” demonstrations that illustrate solutions to non-financial barriers to multifamily retrofits. Applicants must demonstrate that they will achieve at least a 20% reduction in energy consumption at multifamily properties retrofitted using these funds (with additional “points” awarded to applicants who demonstrate energy savings in excess of 25%).⁴⁴ In contrast to other recent HUD NOFAs described in this report, the Multifamily Energy Pilot does not award points for multifamily retrofits that include other sustainability features, such as third-party green building certification.

⁴¹ Use of Public Housing Capital Funds for Financing Activities, 75 Fed. Reg. 65,198 (Oct. 21, 2010).

⁴² HUD, Notice PIH 2011-14, Guidelines for Undertaking Financing Unsecured by Public Housing Assets (Feb. 24, 2011).

⁴³ Pub. L. 111-117, 123 Stat. 3034, 3089.

⁴⁴ HUD’s Fiscal Year (FY) 2010 Notice of Funding Availability (NOFA) for Energy Innovation Fund — Multifamily Pilot Program at 10 (Aug. 22, 2011).

1. *Develop economic valuation metrics on program achievements.* Consistent with the comment in Section II.B., economic valuation of reduced energy consumption would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. Moreover, with a standardized economic valuation method (as proposed above), this program could provide a dollar-based accounting of total public benefits compared to its costs.

COMMUNITY DEVELOPMENT BLOCK GRANTS

Agency: Department of Housing and Urban Development

Program: Community Development Block Grants (CDBG)

Funding: \$2.95 billion appropriated for FY2012, with additional \$358 million appropriated for general community development (available until Sept. 30, 2014)

2010 Synopsis: Through the CDBG program, HUD provides formula grants to the states for use in rehabilitating and improving blighted or troubled neighborhoods. Although HUD has traditionally exercised limited control over the use of CDBG funds, our 2010 Report proposed that HUD require the states to include plans for improving access to energy efficient and sustainable affordable housing in the strategic plans they are required to prepare as a condition for receiving CDBG funds. In addition, we suggested that HUD provide nonbinding guidance on the incorporation of energy efficiency and sustainability criteria into the evaluation and selection of CDBG-funded elderly housing projects, commercial/industrial/public facilities, and economic development projects. Lastly, we noted that HUD could explore incorporating energy efficiency and sustainability factors into the minimum “public benefit” that states must demonstrate in order to receive CDBG funds.

Developments: 1. *Energy Efficiency Standards and Sustainability Recommendations for Neighborhood Stabilization Program.* HUD has not, to our knowledge, amended its general CDBG regulations or guidance in the manner described in our 2010 Report. However, HUD did include energy efficiency requirements and recommended sustainability measures in promulgating regulations for the Neighborhood Stabilization Program (NSP), a new component of the CDBG program that was established in the Housing and Economic Recovery Act of 2008.⁴⁵ The NSP program is more narrowly targeted than the overall CDBG program, in that the NSP provides funding exclusively for states to ameliorate the effects of the housing crisis by purchasing and refurbishing foreclosed and abandoned properties, or demolishing and redeveloping blighted properties.

HUD’s NSP notice states that the Housing and Economic Recovery Act imposes housing quality and habitability requirements that do “not exist” for CDBG funding as a whole. HUD chose to implement those requirements by mandating that all new construction and gut rehabilitations completed with NSP funds meet the ENERGY STAR Qualified New Homes standard (for low-rise buildings) or exceed ASHRAE 90.1-2004 standards by 20% (equivalent to the pilot ENERGY STAR standard for multifamily buildings), as applicable. HUD also

45 Notice of Formula Allocations and Program Requirements for Neighborhood Stabilization Program, 75 Fed. Reg. 64,322 (Oct. 19, 2010).

required NSP-funded properties to utilize ENERGY STAR and WaterSense labeled products where possible. In addition, HUD recommended—but did not require—recipients of NSP funds to “strategically incorporate modern, green building” features into rehabilitated properties.⁴⁶ As guidance, HUD provided a list of recommended sustainability features including sustainable and energy-efficient building materials, transit accessibility, water-conserving features, and on-site renewable energy.⁴⁷

Options

1. *Utilize NSP Requirements as a Model for Reforming Broader CDBG Program.* Although the Housing and Economic Recovery Act gives HUD more legal flexibility with respect to NSP requirements than for CDBG as a whole,⁴⁸ HUD’s NSP notice suggests that energy efficiency and sustainability criteria are compatible with the CDBG program. HUD should consider applying criteria and options that are modeled on the NSP notice to the broader CDBG program, for example by requiring specific such elements to be considered in affordable housing strategies or by specifying specific building energy efficiency and sustainability objectives to be part of the “public benefits” test that CDBG programs must meet.⁴⁹ In addition, HUD should amend the existing regulations for the CDBG program to specifically authorize states to utilize CDBG funds for the same types of recommended sustainability features listed in Attachment C of the NSP regulations, including location efficiency and neighborhood livability measures. The current CDBG regulations identify energy and water efficiency measures as eligible uses of CDBG funds, but do not reflect broader sustainability criteria.⁵⁰

2. *Develop economic valuation metrics for CDBG program goals and outcomes.* Consistent with the comment in Section II.B., economic valuation of reduced energy and water consumption would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. Moreover, with a standardized economic valuation method (as proposed above), this program could provide a dollar-based accounting of total public benefits compared to its costs.

HOPE VI / CHOICE NEIGHBORHOODS

Agency: Department of Housing and Urban Development

Program: HOPE VI / Choice Neighborhoods

Funding: \$120 million appropriated for FY2012 (available until Sept. 30, 2014)

2010 Synopsis: The 2010 Report proposed that HUD strengthen minimum energy efficiency requirements for projects funded by HOPE VI, as specifically authorized under the Energy Policy Act of

⁴⁶ *Id.* at 64,333-34.

⁴⁷ *Id.* at 64,347 (Attachment C).

⁴⁸ In particular, Section 2301 of the Housing and Economic Recovery Act gave HUD broad discretion to waive or modify CDBG requirements that would otherwise apply to the use of NSP funds.

⁴⁹ *See* 24 C.F.R. § 570.209.

⁵⁰ *See* 24 C.F.R. § 570.202(b)(4)-(5).

2005; offer incentive points for HOPE VI applications that meet stringent efficiency and sustainability criteria; revise development cost limits to facilitate incorporation of sustainable features into project proposals; and set aside a portion of existing funding for Choice Neighborhoods for projects that reflect aggressive energy efficiency and sustainability goals.

Developments:

1. *Stronger energy efficiency standards for HOPE VI projects.* HUD's FY2010 NOFA for the HOPE VI program required all applicants to demonstrate compliance with either the 2006 IECC code or ASHRAE 90.1-2004, as applicable.⁵¹ These standards improve upon previous HUD energy efficiency requirements for HOPE VI projects, but fail to reflect the most up-to-date industry standards.

2. *Incentive points for HOPE VI applicants that commit to third party sustainability certification.* The FY2010 HOPE VI NOFA awarded up to 6 points (out of a possible total of 102 points) to applicants who committed to obtain a credible third party sustainability certification such as LEED, Enterprise Green Communities Criteria, or the NAHB Green Building Guidelines. Lesser points were awarded for meeting ENERGY STAR criteria or committing to procure ENERGY STAR labeled appliances.

3. *Choice Neighborhoods NOFAs.* HUD issued two NOFAs in 2010 for the Choice Neighborhoods program. These NOFAs required applicants to meet the same energy codes set forth in the FY2010 HOPE VI NOFA, and provided small allocations of competitive points to applicants who committed to certify developments under the LEED-Neighborhood Development (ND) standard and obtain third party sustainability certification for structures built under the program.⁵² For example, the FY2010 NOFA for Choice Neighborhoods Implementation Grants provided applicants a maximum of 3 points for applicants that certified they meet the requirements of Enterprise Green Communities, the National Green Building Standard, or LEED, or appropriate local or regional standards; 2 points for projects meeting LEED-ND criteria; and 5 points for projects with proximity to public transit. HUD's FY2011 NOFA for Choice Neighborhoods Planning Grants requires applicants to obtain Stage 1 approval for LEED-ND certification.⁵³

Options:

1. *Strengthen energy efficiency and sustainability incentives in future NOFAs.* The HOPE VI and Choice Neighborhoods NOFAs described above provided relatively few points for sustainability when compared to the possible total, and did not provide any quantifiable incentives for exceeding the minimum energy efficiency standards set forth in the NOFA. In order to provide a stronger incentive for applicants to propose high-performance projects, future NOFAs should make energy efficiency and sustainability a more pivotal factor in the application process (representing perhaps 20 to 30% of the points available, consistent with the criteria now applicable to USDA affordable housing) and give applicants progressively greater incentive points for submitting more energy efficient and sustainable designs. USDA's treatment of these factors in its FY2010 NOFA is a worthy model in this regard.

51 HUD, HUD's Fiscal Year (FY) 2010 NOFA for the HOPE VI Revitalization Grants Program, at 20 (2011).

52 HUD, HUD's Fiscal Year (FY) 2010 NOFA for the Choice Neighborhoods Initiative—Round 2 NOFA at 27, 40 (2010); HUD, HUD's Fiscal Year (FY) 2010 NOFA for the Choice Neighborhoods Initiative—Round 1 NOFA at 28-30 (2010)

53 HUD, HUD's Fiscal Year (FY) 2011 NOFA for the Choice Neighborhoods Initiative—Planning Grants at 25 (2010).

2. *Strengthen minimum energy efficiency standards for HOPE VI projects.* Minimum energy efficiency standards for projects funded through the FY2010 NOFA do not reflect the most up-to-date voluntary codes. Consistent with the energy efficiency requirements of 42 U.S.C. § 12709(a), HUD should move to require new HOPE VI projects to meet the 2009 IECC code and ASHRAE 90.1-2007 standards, or exceed those standards if feasible.

3. *Develop economic valuation metrics for HOPE VI / Choice Neighborhood program goals and outcomes.* Consistent with the comment in Section II.B., economic valuation of reduced energy and water consumption and other ‘green building’ and neighborhood improvements would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. Moreover, with a standardized economic valuation method (as proposed above), the above programs could provide a dollar-based accounting of total public benefits compared to its costs.

SUSTAINABLE COMMUNITIES INITIATIVE

Agency:	Department of Housing and Urban Development
Program:	Office of Sustainable Housing and Communities
Funding:	No appropriations provided for FY2012.
Developments:	<p>HUD’s Sustainable Communities Initiative was launched in early 2010, and provides grant funding for regional planning and capacity-building efforts that promote sustainable, affordable housing and transportation options. The 2010 Report did not provide policy options relating to the Sustainable Communities Initiative. However, over the last year, the Sustainable Communities Initiative has proven to be an important vehicle for supporting the 2010 Report’s objectives by supporting local jurisdictions and regional initiatives. In October 2010, HUD awarded \$98 million in grant funding to 45 metropolitan and regional planning proposals under the Sustainable Communities Initiative.⁵⁴ Despite a difficult funding environment, HUD secured an additional \$100 million in grant funding in the FY2011 budget compromise in April 2011. Of this new FY2011 funding, \$70 million will be reserved for regional planning grants and \$30 million will be used for “challenge” planning grants that support more localized initiatives.⁵⁵</p> <p>The 2011 NOFA for the Regional Planning Grant Program specifically recognizes activities related to energy efficient and sustainable building as an eligible use of funding, including mapping current building energy use; identifying targets for building energy performance; developing energy or sustainability standards for new buildings; and developing financing tools for investments in building energy efficiency and renewable energy.⁵⁶ Similarly, the 2011</p>

54 HUD, Press Release, HUD No. 10-233, *HUD Awards Nearly \$100 Million in New Grants to Promote Smarter and Sustainable Planning for Jobs and Economic Growth* (Oct. 14, 2010).

55 HUD, Notice of Funding Availability for the Department of Housing and Urban Development’s Fiscal Year 2011 Community Challenge Planning Grant Program (July 27, 2011); HUD, Notice of Funding Availability (NOFA) for HUD’s Fiscal Year 2011 Sustainable Communities Regional Planning Grant Program (July 27, 2011).

56 Regional Planning Grants FY2011 NOFA, at 24;

NOFA for the Community Challenge Planning Grant program lists energy efficiency and green building, and “environmental benefits” as two of the six potential project outcomes that grant applicants must monitor.⁵⁷

1. *Develop economic valuation metrics for Regional Planning Grant Program goals and outcomes.* Consistent with the comment in Section II.B., economic valuation of sustainability planning goals would help (a) applicants target projects that achieve the largest public benefits; and (b) HUD select applicants and their plans that achieve desired outcomes. This approach would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. Moreover, with a standardized economic valuation method (as proposed above), the above programs could provide a dollar-based accounting of total public benefits compared to its costs.

NATIONAL HOUSING TRUST FUND

Agency: Department of Housing and Urban Development

Federal Housing Finance Agency

Program: National Housing Trust Fund (HTF)

Funding: No appropriations provided for FY2012.

2010 Synopsis: Established by the Housing and Economic Recovery Act of 2008, the HTF was intended to provide grants to state governments to preserve rental housing and improve homeownership opportunities for low-income households. The HTF is supposed to receive minimum financial contributions from Fannie Mae and Freddie Mac, but FHFA has thus far used its statutory authority to relieve the GSEs of their legal duty to fund the HTF.⁵⁸ Anticipating that funding from the GSEs will eventually become available, the 2010 Report noted that HUD could establish strong energy efficiency and sustainability requirements for projects funded through the HTF or, alternatively, require states that allocate HTF funds to give preference to projects that meet stringent energy efficiency and sustainability performance criteria. At the time the 2010 Report was released, HUD had not yet promulgated regulations governing the HTF program.

Developments: HUD issued proposed regulations for the HTF program in October 2010.⁵⁹ These proposed regulations are designed to coordinate with HUD’s existing regulations for the HOME Investment Partnerships program, which is similar to the HTF in terms of its structure and objectives. In contrast to the HOME program regulations, however, the proposed HTF regulations establish minimum energy efficiency, water efficiency and transit accessibility standards for HTF-funded properties. Specifically, the proposed regulations would require all newly constructed or rehabilitated properties to ASHRAE 90.1-2007 standards or ENERGY

⁵⁷ Community Challenge Planning Grants FY2011 NOFA, at 27.

⁵⁸ Housing Trust Fund, 75 Fed. Reg. 66,978, 66,978 (Oct. 29, 2010).

⁵⁹ *Id.*

STAR qualification for new homes. The standards would also require installation of ENERGY STAR and WaterSense labeled products.⁶⁰ In addition, the regulations allow (but do not require) states to give priority to projects with additional energy efficiency and sustainability features in allocating the funds they are provided through the HTF.⁶¹ The preamble to the proposed standards notes that energy efficiency and sustainability features are key to reducing transportation and energy costs for tenants and homeowners that live in HTF-funded properties, as well as providing a healthier living environment.⁶²

Options:

1. *Finalize the HTF rule.* HUD should move expeditiously to finalize its proposed rule governing the HTF.

2. *More stringent energy efficiency and sustainability standards for HTF-funded properties.* HUD has discretion to establish stronger energy efficiency standards for HTF-funded properties (for example, HUD could require properties to achieve 20% greater performance than required by ASHRAE 90.1-2007 standards, as it required in its section 202 and section 811 NOFAs in FY2010). In addition, HUD could broaden its minimum standards for HTF-funded properties by requiring appropriate sustainability certifications.

3. *Guidance to states on allocation of HTF.* Exercising its authority to regulate the application and selection process that states must use in awarding HTF proceeds to individual projects, HUD could provide binding requirements or nonbinding guidance to states on awarding preference to proposed HTC projects that reflect strong energy efficiency and sustainability performance.

4. *Remove Barriers to Financing HTF As Soon As GSEs Are Capable of Making Required Contributions.* Given the current climate in Congress, it is unlikely that the HTF will receive appropriations in the near future. However, FHFA has existing legal authority to require the GSEs to make their required contributions to the HTF. FHFA should continuously evaluate whether the GSEs are in sufficiently sound financial condition to make their required contributions, and enforce the required contribution at the earliest feasible opportunity.

5. *Develop economic valuation metrics for HTF goals and outcomes.* Consistent with the comment in Section II.B., economic valuation of HTF energy and water efficiency improvements would more completely reflect the guidance in EO 13514 on a full accounting of financial, social and environmental costs. Moreover, with a standardized economic valuation method (as proposed above), the above programs could provide a dollar-based accounting of total public benefits compared to its costs.

SUPPORTIVE HOUSING FOR THE ELDERLY AND DISABLED

Agency: Department of Housing and Urban Development

Program: Section 202 Supportive Housing for the Elderly

60 *Id.* at 66,984.

61 *Id.* at 66,988.

62 *Id.* at 66,979.

Section 811 Supportive Housing for the Disabled

Funding:

Section 202: \$284 million appropriated for FY2012 (excluding \$91 million reserved for service grants and service coordinators; funding available until Sept. 30, 2015)

Section 811: \$165 million appropriated for FY2012 (funding available until Sept. 30, 2015)

2010 Synopsis:

Our 2010 Report suggested that HUD support energy efficiency and sustainable housing for the elderly and disabled by: revising capital grant award criteria to provide an “edge” to applicants proposing to incorporate aggressive energy efficiency and sustainability measures in their buildings; providing guidance approving certain encumbrances, such as long-term leases for renewable energy property and second mortgages to finance energy efficiency improvements; and ensure that total development cost limitations and minimum quality standards for section 202 and section 811 projects are appropriately tailored for energy efficient and sustainable buildings.

Developments:

1. *Minimum property standards and incentives for high performance.* The fiscal year 2010 NOFAs for the section 202 and section 811 programs include new requirements for energy and water conservation, including: (1) a minimum requirement that all low-rise multifamily developments meet ENERGY STAR Qualified Homes requirements, and that all mid-rise and high-rise developments exceed ASHRAE 90.1-2007 Appendix G by 15% (unless state energy codes are more stringent, in which case compliance with state energy codes is required); (2) a minimum requirement that all properties install ENERGY STAR-labeled appliances; (3) a minimum requirement that all properties install WaterSense-labeled water fixtures or better; (4) a minimum requirement that all properties that are not undergoing substantial rehabilitation commit to pre- and post-construction energy audits, and commit to install ENERGY STAR appliances and WaterSense fixtures in the future; and (5) a minimum requirement that all applicants provide operations and maintenance plans that include ENERGY STAR appliances and WaterSense fixtures, and “staff training needed to maintain energy improvements and continue green building practices for the future.”⁶³ In addition to these mandatory measures, the NOFA awards applicants up to four points (out of a possible total of 102) in the competitive application process for obtaining sustainability certification from a recognized program (including LEED, the NAHB Green Building Guidelines, and Enterprise Green Communities Criteria).⁶⁴ An additional seven points are available for projects located in transit-accessible sites.⁶⁵ Consistent with the options identified in the 2010 Report, both of the section 202 and 811 NOFAs contain significantly stronger energy efficiency requirements and provide more incentives for sustainability than the FY2009 NOFAs. The NOFAs also strongly encourage, but do not provide additional points for, certain sustainability measures such as the incorporation of passive solar orientation principles and the use of an integrated design process.⁶⁶

63 HUD, Notice of Funding Availability (NOFA) for HUD’s Fiscal Year 2010 Section 202 Supportive Housing for the Elderly Program, at 19 (Mar. 2011); HUD, Notice of Funding Availability (NOFA) for Fiscal Year (FY) 2010 Section 811 Supportive Housing for Persons With Disabilities Program (Apr. 2011).

64 Section 202 NOFA, at 20.

65 *Id.* at 54.

66 *Id.* at 21.

2. *Amendments to existing authority.* Both the section 202 and section 811 programs were significantly reformed in bills enacted in the 111th Congress.⁶⁷ These reforms generally did not affect the options in the 2010 Report or create new opportunities for energy efficiency and sustainability. One exception pertains to the section 202 program, which now explicitly provides HUD with authority to approve amounts of residual receipts in excess of \$1,000 per dwelling for any purpose deemed appropriate—including, potentially, energy efficiency and sustainability improvements.⁶⁸

Options:

1. *Provide stronger incentives for high-performing buildings.* Compared to other housing assistance programs (for example, Rural Housing Service programs discussed in this report), the section 202 and 811 NOFAs provide relatively small levels of reward to applicants that propose to develop energy efficient and sustainable properties. HUD could increase the number of “points” awarded to properties that meet specified standards of efficiency and sustainability, and vary the number of points awarded to incentivize applicants to meet the highest possible standards of performance.

2. *Develop economic valuation metrics for high-performance building incentive program goals.* This option is consistent with the comment in Section II.B.

WEATHERIZATION ASSISTANCE PROGRAM

Agency: Department of Energy
Department of Housing and Urban Development

Program: Weatherization Assistance Program (WAP)

Funding: \$65 million appropriated for FY2012

2010 Synopsis: Helping multifamily properties participate more fully in the WAP was a key focus of the 2010 Report. Multifamily properties have traditionally lagged in receiving WAP assistance, because the income eligibility and other requirements of the WAP program are sometimes difficult to satisfy for multifamily properties; because traditional grant-based WAP assistance has negative tax consequences for multifamily properties receiving the Low Income Housing Tax Credit; and because states administering WAP funds sometimes require cash-strapped multifamily properties to provide matching funds for WAP assistance. Accordingly, the 2010 Report suggested, among other things, that WAP issue updated software tools that more accurately model energy savings at multifamily dwellings; discourage states from requiring matching funds from multifamily properties; encourage states to direct a larger share of WAP assistance to multifamily properties; set sustainability standards for materials used in weatherization projects; and issue interpretive rules to make it easier for multifamily properties to establish eligibility for WAP assistance.

67 Section 202 Supportive Housing for the Elderly Act of 2010, S. 118, 111th Cong. (2010); Frank Melville Supportive Housing Investment Act of 2010, S. 1481, 111th Cong. (2010).

68 S. 118, § 203 (amending 12 U.S.C. § 1701q Note).

Developments:

1. *DOE Guidance on Tenant Benefits and Multifamily Participation.* In 2010, DOE issued two guidance documents to state agencies that administer WAP funds that are consistent with the options in the 2010 Report and encourage higher levels of WAP assistance for multifamily properties. The first guidance document, issued in April 2010, provided examples of how multifamily properties can show that they meet the statutory requirement that the benefits of WAP-funded energy efficiency improvements accrue primarily to low-income tenants—even in situations where the tenants do not pay utility bills directly.⁶⁹ In December 2010, DOE issued another guidance document to states emphasizing that WAP assistance is intended to be made available to low-income tenants in all types of housing, including multifamily properties. DOE also notified states that it would evaluate the priority given to multifamily properties in its future review of state-administered WAP programs, and would disapprove state programs that exclude assistance to multifamily properties.⁷⁰

2. *HUD Assistance in Identifying and Certifying Eligible Properties.* In 2010, HUD cooperated with DOE to streamline the process of identifying properties that meet the statutory and regulatory income eligibility requirements for WAP assistance (especially DOE's regulatory requirement that 66% of the households in each building receiving WAP assistance have incomes below 200% of the federal poverty level). First, HUD provided updated lists in 2010 and 2011 identifying specific HUD-assisted properties around the country that meet the income requirement, based on HUD's tenant records. Second, HUD created a "self-certification" procedure to allow property owners to add themselves to the list by providing tenant income information.⁷¹ Properties that are listed by HUD in this manner face a lower burden in demonstrating eligibility for WAP assistance, removing one of the key obstacles to improving multifamily access to WAP funds.

3. *Anticipated DOE / IRS Efforts to Mitigate Tax Consequences of WAP Funds.* Our 2010 Report noted that under the Internal Revenue Code, WAP funds can have adverse tax consequences for owners of properties participating in the Low Income Housing Tax Credit program. The sponsors understand that DOE and IRS are both working on guidance that should help mitigate those tax consequences by, respectively, authorizing the distribution of WAP funds in the form of a revolving loan and clarifying the tax implications of WAP for LIHTC properties built after July 2008.

4. *Implementation of Weatherization Innovation Pilot Program.* In August 2010, DOE awarded \$30 million in grant funding to sixteen partner organizations as part of a Weatherization Innovation Pilot Program (WIPP) authorized in the Energy Policy Act of 2005. The WIPP funding recipients include several projects that will implement demonstrations of innovative

69 DOE, Weatherization Program Notice 10-15A, Guidance Regarding Accrual of Benefits to Low-Income Tenants in Multifamily Buildings Under the Weatherization Assistance Program (Apr. 8, 2010). DOE listed the following potential benefits from WAP assistance as factors that would make a multifamily property eligible for WAP assistance: longer term preservation of the property as affordable housing; continuation of protection against rent increases; investment of energy savings in improved facilities or services, or improvements in the health and safety of the property for low-income tenants; improvements to heat and hot water distribution, ventilation, or other features that add to the comfort of residents; and sharing of energy savings with tenants.

70 DOE, Weatherization Program Notice 11-4, Guidance Regarding Prioritizing Weatherization Work Based on Housing Type (Dec. 22, 2010).

71 HUD, Multifamily Certification of Income Eligibility for Addition to the Department of Energy's Multifamily Weatherization Listings (Feb. 1, 2011).

financing techniques (such as ESPCs), and new technologies including smart meters and in-home energy monitors, at low-income multifamily and rental properties.⁷²

Options:

1. *Integrate Evaluation of WIPP Into DOE Weatherization Regulations, Where Possible.* Once completed, the effectiveness of the projects funded under the WIPP program described above will be evaluated by Oak Ridge National Laboratory. Where possible, DOE should integrate the results of this evaluation into its WAP program regulations and guidance. For example, if warranted by the performance of the pilot project, DOE may consider adding technologies such as smart meters and in-home displays to the list of authorized “weatherization materials” that may be installed using WAP funds under 10 C.F.R. § 440.3. Similarly, DOE may also consider providing guidance to states on cost-effective use of techniques such as ESPCs to maximize the leverage of WAP funds.

2. *Build Grantee Capacity to Undertake Multifamily Weatherization.* DOE should require that a portion of each state’s weatherization funds be used for training, technical assistance, and energy efficiency assistance to eligible multifamily buildings.⁷³ Alternatively, DOE could use a portion of the funds reserved each year for multifamily-oriented training and technical assistance.⁷⁴ Where states and sub-grantees have been open to weatherizing multifamily rentals but lack capacity and expertise, DOE could support these efforts by accelerating training and technical assistance for multifamily rental housing. There are a growing number of states and WAP providers with this expertise and they could serve as resources for peer to peer training and technical assistance. Allowing experienced WAP providers and approved energy auditors to be available to partner/provide services in other localities and states could accelerate this use of WAP funds in multifamily housing.

DATA COLLECTION IN HUD PROGRAMS

Agency: Department of Energy
Department of Housing and Urban Development

Program: Weatherization Assistance Program (WAP)

2010 Synopsis: Our 2010 Report stressed the vital need for more consistent, timely, and rigorous collection of data on energy consumption, water consumption, and other building features for buildings receiving federal assistance, especially within programs implemented by HUD and the FHA. Developing such data is essential for enabling buyers, developers, lenders, and federal agencies to accurately assess and value the benefits of energy efficiency and sustainability

72 DOE, WIPP Projects: Grantees Selected for the Weatherization Innovation Pilot Program, http://www1.eere.energy.gov/wip/wipp_projects.html.

73 Authority to impose such a condition can be inferred from DOE’s general authority to allocate funding to states on the basis of “such . . . factors as the Secretary may determine necessary . . . to carry out the purpose and provisions of this part,” and require states to provide such “information” and “assurances” as may be required to carry out the section of the U.S. Code providing for allocation of funds to states. 42 U.S.C. § 6864(a).

74 DOE is authorized by statute to reserve up to 20% of weatherization appropriations for training and technical assistance programs. 42 U.S.C. § 6866.

measures. Indeed, the lack of such data is a key hindrance to the development of robust markets for energy efficient and sustainable real estate.

To date, the most comprehensive government databases on building energy consumption and performance are the Commercial Buildings Energy Consumption Survey (CBECS) and the Residential Buildings Energy Survey (RBES) maintained by the Energy Information Administration (EIA). These data in these surveys is growing out-of-date, however, and these databases have never been sufficiently comprehensive or adequately resourced to meet the needs of the market. New approaches are urgently required. To that end, the 2010 Report suggested that HUD (as well as the GSEs and FHFA) step up its data collection efforts for properties receiving FHA insurance and other forms of federal assistance.

Developments:

1. *2012 Budget Request.* HUD’s FY2012 budget request acknowledges the importance of improved data collection by seeking \$5 million for HUD’s Office of Sustainable Housing and Communities to launch an Energy Management and Tracking System. This database, according to the request, “will provide a vehicle for collecting uniform data on baseline and projected energy consumption and pre- and post-retrofit performance of energy efficiency and green improvements financed through HUD programs.”⁷⁵ Unfortunately, it does not appear that this request was funded in the HUD appropriations for FY2012.

Options:

1. *Develop Coordinated Federal Approach to Data Collection From Federally-Assisted Properties.* HUD’s FY2012 budget request is a step in the right direction. HUD could cooperate with other relevant Federal agencies, perhaps as an extension of the RPWG process, to devise uniform, mandatory energy data collection protocols for Federally owned and Federally-assisted properties. To this end, the Administration should convene an interagency working group including HUD, the Energy Information Administration, DOE’s Building Technologies Program, the National Institute of Standards and Technology, USDA, EPA, DOD, Fannie Mae, Freddie Mac, and the General Services Administration. This group should agree upon required data elements, required frequency for data collection, and procedures for gathering data, and devise a system for compiling and releasing this data to the public in a useful format. Such a standard approach could be incorporated into the green capital needs assessment (“CNA”) being developed by the RPWG, and could draw from efforts by the Residential Energy and Water Data Collaborative to identify key data needs and on the energy data “taxonomy” being developed through the EPA/Fannie Mae initiative described above.⁷⁶

RURAL HOUSING SERVICE PROGRAMS

Agency: Department of Agriculture

75 HUD, FY2012 Budget: Justifications for Estimates, at EE-2, EE-4.

76 The Renewable Energy and Water Data Collaborative is a joint effort undertaken by the Local Initiatives Support Corporation, NeighborWorks America, Stewards of Affordable Housing for the Future, and the Housing Partnership Network, which seeks to advance a national data collection standard across the affordable housing industry to support green building and retrofit practices. The Collaborative’s white paper, *Establishing Threshold Data Points to Track Building Performance*, identifies the essential or “core” data elements that affordable housing properties would need to collect in order to benchmark and evaluate building energy performance. The white paper is available at <http://www.greencommunitiesonline.org/tools/documents/residential-energy-water-collaborative-white-paper.pdf>.

Program: Rural Housing Service

Funding: The Rural Housing Service’s FY2012 appropriations limited the maximum principal amounts that could be supported by RHS direct loans or guarantees as follows:

Section 515 Rental Housing: \$64.5 million

Section 538 Multi-family Housing Guarantees: \$130 million

Section 514 Farm Labor Housing: \$20.8 million (plus additional \$7.1 million for grant funding)

2010 Synopsis: The 2010 Report noted that USDA is required to “promote the use of energy saving techniques” through minimum energy efficiency standards for newly constructed housing built with assistance from the Rural Housing Service. However, the report pointed out that this apparently broad authority is also circumscribed by statutory provisions that require USDA’s energy efficiency standards to be consistent with standards set by HUD for FHA-insured properties, and that deem any property that complies with voluntary building codes to also comply with USDA’s standards. Our report noted that USDA could modify the application process for Rural Housing Service assistance to incentivize applicants to meet high standards for energy efficiency and sustainability.

Developments:

1. *Net Zero Energy Goal.* USDA’s Rural Development program has adopted a long-term goal of ensuring that all new multifamily housing projects receiving USDA assistance achieve “net zero” energy performance (that is, the buildings consume no more energy than they generate).⁷⁷
2. *Integrating Energy Efficiency and Sustainability Into NOFAs.* USDA integrated strong energy efficiency and sustainability considerations as key selection criteria in several NOFAs issued in 2010. For example, the NOFA setting forth the application process for Section 515 grants for the construction of new rental properties provided 37 points (out of a possible total of 152) for applicants that committed to enroll in a third-party certification program for energy efficiency or sustainability, including ENERGY STAR for Homes, the Department of Energy’s Builder’s Challenge, Enterprise Green Communities, LEED, and the National Association of Home Builders ICC 700-2008 National Green Building Standard. The NOFA provided additional points for properties that met successively more stringent levels of energy efficiency or sustainability certification. In addition, the NOFA provided a maximum of 30 additional points for on-site renewable energy generation (with the amount of points scaled according to percentage of on-site energy needs met with on-site generation).⁷⁸ Similar energy efficiency and sustainability incentives were also included in USDA’s NOFA for Section 514 and 516 grants for the construction of farm labor housing.⁷⁹ In these NOFAs, the quantity of points awarded for energy efficiency and sustainability amounted to a significant percentage

77 Notice of Funding Availability of Applications (NOFA) for Section 514 Farm Labor Housing Loans and Section 516 Farm Labor Housing Grants for Off-Farm Housing for Fiscal Year (FY) 2010, 75 Fed. Reg. 25,833, 25,837 (May 10, 2010).

78 Notice of Funding Availability (NOFA): Section 515 Rural Rental Housing Program for New Construction in Fiscal Year 2010, 75 Fed. Reg. 19,348, 19,350-51 (Apr. 14, 2010).

79 75 Fed. Reg. at 25, 837-38 (providing separate awards of points for on-site renewable energy generation and enrollment in energy efficiency/sustainability certification program).

of an applicant's total score, giving a powerful incentive for meeting high levels of building performance.

In fiscal year 2011, USDA extended similar energy efficiency and sustainability incentives to other Rural Housing Service programs. For example, the FY 2011 NOFA for loan guarantees under the Section 538 Guaranteed Rural Rental Housing Program reserved 20 points (out of a possible total of 110) for projects certified under the Enterprise Green Communities Criteria, LEED for Homes, NAHB Green Building Standard or other third party certification approved by USDA.⁸⁰ Another FY2011 NOFA for a Section 514, 515, and 516 Multi-family Housing Revitalization Demonstration Program reserves as much as 48 points for projects that meet the Enterprise Green Communities Criteria and city, county, or municipal green building/energy efficiency standards.⁸¹

3. *Develop economic valuation metrics for the net zero and other grant programs.* This option is consistent with the comment in Section II.B.

MILITARY HOUSING

Agency: Department of Defense

Program: DOD-Owned Military Housing

Military Housing Privatization Initiative

Funding: Major elements of FY2012 appropriations for military construction include:

Army Military Construction: \$3.0 billion

Navy and Marine Corps Military Construction: \$2.1 billion

Air Force Military Construction: \$1.2 billion

Defense-Wide Military Construction: \$3.4 billion

Family Housing Construction (All Services): \$338 million

2010 Synopsis: Our 2010 Report noted that military housing facilities are subject to the energy efficiency and sustainable design standards that DOE is required to promulgate under EISA 2007, and that DOD itself and the individual services of the armed forces have adopted policies requiring most new construction to meet LEED Silver certification. The report suggested that DOD

80 Notice of Funding Availability (NOFA) for Loan Guarantees Under Section 538 Guaranteed Rural Rental Housing Program (GRRHP) for Fiscal Year 2011, 76 Fed. Reg. 30,641, 30,646 (May 26, 2011).

81 An additional 10 points are available for installing on-site energy generation systems, and a further 10 points are awarded to applicants that obtain green property management credentials. Notice of Funding Availability: Sections 514, 515, and 516 Multi-Family Housing Revitalization Demonstration Program for Fiscal Year 2011, 76 Fed. Reg. 39,820, 39,825-26 (July 7, 2011). For other FY 2011 NOFAs issued by the Rural Housing Service that incorporate incentives for energy efficient and sustainable construction *see* Notice of Funding Availability (NOFA): Section 515 Rural Rental Housing Program for New Construction or Purchase and Rehabilitation of Existing Rural Multi-Family Properties in Fiscal Year 2011, 76 Fed. Reg. 41,196, 41,199-200 (July 13, 2011); Notice of Funding Availability of Applications (NOFA) for Section 514 Farm Labor Housing Loans and Section 516 Farm Labor Housing Grants for Off-Farm Housing for Fiscal Year (FY) 2011, 76 Fed. Reg. 39,813, 39,817-18 (July 7, 2011).

build on these requirements by ensuring buildings meet credible operations and maintenance standards; apply strong location efficiency or neighborhood design standards to new military housing; and collect and publicize data regarding the costs and benefits of its building energy efficiency and sustainability initiatives.

Developments:

1. *More Stringent Energy Efficiency and Sustainability Standards for DOD Facilities.* In the last year, DOD and the individual services have revised the construction and design criteria that apply to their facilities to incorporate new requirements and ensure that existing mandates in EISA 2007 are implemented. For example, in October 2010 DOD issued a supplement to its Unified Facilities Criteria (UFC) on building sustainability, which requires that 40% of LEED credits claimed by new construction must pertain to electricity and water savings, and requires renovations and repairs of existing buildings to conform to LEED Silver “where appropriate.”⁸² The Departments of the Army⁸³ and the Navy⁸⁴ also issued revised policies ensuring that new construction will meet stringent energy efficiency requirements, meet 30% of hot water demand using solar heating systems as required by EISA 2007, and dramatically reduce indoor and outdoor water consumption. The Army’s requirements also include the application of ASHRAE 189.1 siting standards; installation of advanced metering systems with data acquisition capability; the use of cool roofs and renewable energy technology consistent with ASHRAE 189.1; and the use of total building commissioning practices. The new Army requirements also appear to extend stringent energy efficiency and sustainability standards to Family Housing, as suggested in the 2010 Report.⁸⁵ In May 2011, the Navy also announced that it was strengthening its building standards by requiring all new construction to achieve LEED Gold beginning in fiscal year 2013.⁸⁶

2. *Army Net Zero Initiative.* The Department of the Army adopted a goal of achieving net zero energy consumption by 2030, as well as working towards net zero water consumption and waste generation. The Army also took concrete steps toward achieving this goal by designating twenty bases to achieve net zero status with respect to energy, water, or waste by 2020. This initiative will not just affect housing, but also other types of buildings and facilities operated on Army bases.

3. *Navy Net Zero Initiative.* The Department of the Navy has set a goal of having half of its bases achieve net zero energy consumption by 2020, as well as having half of its energy derive from non-fossil fuel sources within the same timeframe.⁸⁷

Options

1. *Air Force Net Zero Initiatives.* In 2009, the Air Force announced a goal of achieving net zero energy consumption at the Air Force Academy. The Air Force has also undertaken significant energy efficiency initiatives with respect to its operations and fuel requirements,

82 Office of the Under Secretary of Defense (Acquisition, Technology & Logistics), Department of Defense Sustainable Buildings Policy (Memorandum signed by Deputy Under Secretary Dorothy Robyn, Oct. 25, 2010).

83 Office of the Assistant Secretary of the Army (Installations, Energy and Environment), Sustainable Design and Development Policy Update (Memorandum signed by Assistant Secretary of the Army Katherine Hammack, Oct. 27, 2010) (“Army SDD Update”).

84 Naval Facilities Engineering Command, Engineering & Construction Bulletin 2011-01 (Dec. 20, 2010). These policies also apply to the Marine Corps, which is part of the Department of the Navy.

85 See Army SDD Update at 6 (requiring Family Housing beginning in FY2013 to either attain LEED Silver rating, ENERGY STAR qualification for new homes, or energy consumption that is 45% below the IECC 2009 code).

86 Navy Buildings Must be Certified Green Starting in Fiscal 2013, Top Official Says, BNA Daily Environment Report May 11, 2011.

87 Navy Buildings Must be Certified Green Starting in Fiscal 2013, Top Official Says, BNA Daily Environment Report May 11, 2011.

and has promoted the use of on-site renewable energy at its fixed installations. However, to our knowledge, the Air Force has not instituted a service-wide or multiple-base net zero commitment comparable to the Army or Navy initiatives, and has not established net zero waste and water consumption goals.

2. *Develop economic valuation metrics for the net zero initiatives.* This option is consistent with the comment in Section II.B.

STANDARDS FOR FEDERAL BUILDINGS

Agency: Department of Energy

Program: Energy Efficiency / Sustainable Design Standards for Federal Buildings

2010 Synopsis: The 2010 Report noted that, as of April of 2010, DOE had not yet proposed mandatory energy efficiency, fossil-fuel consumption, and sustainable design standards for new and renovated federal buildings as required by the Energy Independence and Security Act of 2007. Accordingly, the 2010 Report recommended that DOE move quickly to promulgate these standards; to strengthen energy efficiency standards for federal buildings beyond the minimum amount required in the Energy Policy Act of 2005; and strengthen the energy efficiency provisions of the General Services Administration’s standard lease template.

Developments: 1. *DOE Proposes Sustainable Design Standards for Federal Buildings.* In late May 2010, DOE finally proposed long-overdue sustainable design requirements for new and renovated federal buildings, as called for in Section 433 of the Energy Independence and Security Act of 2007.⁸⁸ DOE’s proposed standards address building commissioning requirements; water-saving targets based on the Guiding Principles; indoor air quality; siting of new facilities; and a statutory requirement that solar systems provide at least 30% of hot water demand. The standards would require “life cycle cost-effective” measures for all new and renovated Federal buildings, and all measures that are “practicable” for larger projects.

2. *DOE Proposes Fossil Fuel Consumption Standards for Federal Buildings.* DOE also proposed standards to implement the requirement in section 433 of the Energy Independence and Security Act of 2007 that federal agencies reduce their building fossil fuel consumption by a minimum percentage through 2030.⁸⁹ DOE’s proposed standards would apply to new and renovated federal buildings (including leased buildings where the agency controls the design), and would allow agencies to demonstrate compliance by signing long-term power purchase agreements with renewable energy generators.

3. *DOE Updates Energy Efficiency Standards for Federal Buildings.* As called for in the 2010 Report, DOE issued updated energy efficiency standards for new and renovated Federal buildings pursuant to section 109 of the Energy Policy Act of 2005.⁹⁰ The new standards

88 Energy Efficiency and Sustainable Design Standards for New Federal Buildings, 75 Fed. Reg. 29,933 (May 28, 2010).

89 Fossil Fuel-Generated Energy Consumption Reduction for New Federal Buildings and Major Renovations of Federal Buildings, 75 Fed. Reg. 63,404 (Oct. 15, 2010).

90 42 U.S.C. § 6834(a)(3)(B).

require all Federal buildings to comply with AHSRAE 90.1-2007 or the 2009 IECC voluntary efficiency codes, as applicable, and to exceed those voluntary standards by 30% if life-cycle cost-effective.⁹¹

Options:

1. *Address Key Shortcomings in Proposed Sustainable Design Standards.* DOE’s proposed sustainable design standards should be strengthened in the final rule or as part of a future rulemaking. In particular: (a) the proposed standards would exempt leased buildings where the tenant agency does not exercise “significant” control over the building’s design; this exemption is vague and is not included in the statute, which requires the standards to apply to all buildings constructed for the purpose of being leased by a federal agency; (b) the proposed standards would consider “impracticable” any energy efficiency or sustainability improvements that increase the cost of a building by more than 3%, an arbitrary figure that has no basis in the statute; and (c) the proposed standards exhort agencies to site buildings in transit-accessible, location-efficient locales.

2. *Address Key Shortcomings in Proposed Fossil Fuel Consumption Standards.* DOE’s proposed fossil fuel consumption standards should also be strengthened. In particular: (a) the proposed standards would exempt certain renovations that should be subject to the fossil fuel consumption standards under the plain language of the statute. In particular, the proposed standards would exempt any building whose renovation costs do not exceed \$2,500,000 in a single fiscal year, even when the overall renovation will cost well over \$2,500,000 in total. Furthermore, the proposed standards would exempt the renovation of any leased building for which the tenant agency does not exercise “significant” control over the building’s design—a vague standard that may create opportunities for agencies to avoid the application of the standards; (b) as permitted in EISA, the proposed standards would also allow for a downward revision of the fossil fuel consumption requirement in cases where meeting the standards is “technically impracticable.” However, the proposed standards would allow agencies to cite “high costs” as a basis for technical impracticability. DOE should refine this criterion to ensure that agencies are only able to use costs as a basis for relaxing the fossil fuel consumption standards in extreme cases.

PRODUCT EFFICIENCY STANDARDS AND LABELING

Agency: Department of Energy
Environmental Protection Agency

Program: Product Efficiency Standards
ENERGY STAR

2010 Synopsis: The Energy Policy and Conservation Act of 1975 (EPCA), as amended, vests DOE with authority to set energy and water efficiency standards for a broad range of consumer and

⁹¹ Energy Efficiency Design Standards for New Federal Commercial and Multifamily High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings, 76 Fed. Reg. 49,279, 49,280 (Aug. 10, 2011).

commercial products. The statute establishes energy and water efficiency standards for a number of product categories, and provides DOE with authority to designate additional categories of energy-using consumer and commercial products for regulation.⁹² The statute also requires DOE to consider revising the efficiency standards periodically to reflect “maximum improvement . . . which the Secretary determines is technologically feasible and economically justified.”⁹³

The 2010 Report noted that there is considerable latitude for DOE to expand efficiency standards to new categories of major energy-consuming products, such as low-voltage dry type transformers and reflector lamps. The report also suggested that DOE strengthen water efficiency standards for showerheads, faucets, urinals, and water closets, which date to 1992 and lag significantly behind EPA’s voluntary WaterSense standards.

Developments:

1. *New Product Efficiency Standards.* Consistent with the policy options proposed in the 2010 Report, DOE has finalized or proposed revised efficiency standards for a number of product categories over the last year, including residential water heaters; reflector lamps; residential refrigerators and freezers; residential clothes dryers; room air conditioners; and residential furnaces, air conditioners, and heat pumps.⁹⁴ DOE also issued a request for information on how smart grid-related features, which enable appliances to respond to real-time electricity pricing information, should be taken into account in test procedures and appliance efficiency standards.⁹⁵

2. *Strengthened Rulemaking and Enforcement Process.* DOE has also taken several steps to streamline the standard-setting process going forward and ensure more vigorous enforcement of existing efficiency standards. On November 16, 2010, DOE announced a number of changes to its procedures for setting efficiency standards. These changes include (1) gathering data for new efficiency standards on an informal basis prior to the issuance of a proposed rule, rather than using a time-intensive notice-and-comment process; (2) issuing shorter preambles to proposed rules, requiring less time for internal review; and (3) establishing a standing committee to negotiate “consensus” standards among industry and energy efficiency advocates.⁹⁶ DOE also finalized a regulation in March 2011 that, for the first time, requires manufacturers to certify on an annual basis that the products they distribute in the United States comply with applicable efficiency standards. The new regulation also empowers DOE to proactively test products for compliance with applicable standards (DOE’s previous enforcement policy only allowed the Department to test a product after

92 42 U.S.C. § 6292.

93 42 U.S.C. § 6295(m)(1), (o)(1).

94 Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners, 76 Fed. Reg. 22,454 (Apr. 21, 2011); Energy Conservation Standards for Residential Refrigerators, Refrigerator-Freezers, and Freezers, 76 Fed. Reg. 59,470 (Sept. 27, 2010); Energy Conservation Standards for Certain Small Diameter, Elliptical Reflector, and Bulged Reflector Incandescent Reflector Lamps, 75 Fed. Reg. 34,656 (June 18, 2010); Energy Conservation Standards for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters, 75 Fed. Reg. 20,112 (Apr. 16, 2010); Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps, 76 Fed. Reg. 37,408 (June 27, 2011).

95 Treatment of “Smart” Appliances in Energy Conservation Standards and Test Procedures; Request for Information, 76 Fed. Reg. 47,518 (Aug. 15, 2011).

96 DOE, DOE Announces Changes to the Energy Conservation Standards Process (Nov. 16, 2010), available at http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/changes_standards_process.pdf.

receiving a complaint).⁹⁷ In 2010, DOE reported that it has intensified its efforts to enforce existing efficiency standards by reviewing certification reports submitted by manufacturers, undertaking enforcement actions against non-compliant manufacturers, and pursuing manufacturers who neglect to certify the efficiency of their products.⁹⁸

3. *Recognition of “Most Efficient” ENERGY STAR Products.* As recommended in the 2010 Report, EPA proposed in March 2011 to designate top-performing products that qualify for the ENERGY STAR label.⁹⁹ The final criteria for this “Most Efficient” designation were released in May 2011 for five product categories, including clothes washers, refrigerator-freezers, furnaces, central air conditioners and heat pumps, and televisions.¹⁰⁰ This simple extension of the ENERGY STAR program will allow consumers to easily identify those products that meet extraordinarily high levels of performance, and encourage manufacturers to design products that exceed existing ENERGY STAR criteria.

Options:

1. *Prioritize Continued Development of Appliance and Equipment Standards.* As DOE and other agencies search for areas in which they can reduce future expenditures, appliance and equipment efficiency standards may experience increasing budget pressure. DOE should prioritize the continued development of efficiency standards and, to the extent DOE has discretion to do so, ensure that adequate funding and personnel are allocated to this program. These standards require relatively few resources to develop,¹⁰¹ yet they spur continuous innovation in product design and contribute to enormous energy savings and economic benefits for consumers, tenants, and building owners.¹⁰²

2. *Initiate Review of Product Standards Required by EISA 2007.* Section 305 of the Energy Independence and Security Act of 2007 (EISA) amended EPCA to require that DOE review existing product efficiency standards every six years, and determine whether the standards should be amended.¹⁰³ Although this requirement explicitly applies to “any rule” establishing product efficiency standards, DOE has interpreted the requirement narrowly to exclude product standards for which the six-year deadline had already expired as of the enactment of the EISA.¹⁰⁴ DOE has also not scheduled certain product standards for review — such as

97 Certification, Compliance, and Enforcement for Consumer Products and Commercial and Industrial Equipment, 76 Fed. Reg. 12,422, 12,423 (Mar. 7, 2011).

98 DOE, *Multi-Year Program Plan*, p. 74 (October 2010), available at http://apps1.eere.energy.gov/buildings/publications/pdfs/corporate/regulatory_programs_mypp.pdf

99 EPA, Letter to Stakeholders (March 16, 2011), available at http://www.energystar.gov/ia/partners/downloads/Most_Efficient_Cover_Letter.pdf.

100 EPA, Letter to Stakeholders (May 5, 2011), available at http://www.energystar.gov/ia/partners/downloads/Most_Efficient_Cover_LetterMay11.pdf.

101 In FY2010, appliance and equipment efficiency standards received an appropriation of \$35 million — just over 0.001% of DOE’s total FY2010 budget.

102 See, e.g., American Council for an Energy Efficient Economy and Alliance to Save Energy, *Appliance and Equipment Standards: Minimum Efficiency Standards Save Energy and Money, Create Jobs* (Mar. 2011) (noting that existing efficiency standards have reduced U.S. energy consumption by 3.6%, and that the additional consumption and investment resulting from these reductions in energy expenditures created a net 340,000 American jobs in 2010).

103 See 42 U.S.C. § 6313(a)(6)(C), 42 U.S.C. § 6295(m)(1). For certain commercial equipment addressed in 42 U.S.C. § 6313, a amendment to an efficiency standard is only required if a new ASHRAE 90.1 efficiency standard has been issued since the federal efficiency standard was last reviewed. However, DOE is still required to make a formal determination every six years as to whether an amendment to an existing efficiency standard is required. 42 U.S.C. § 6313(a)(6)(C)(i).

104 See Energy Conservation Standards and Test Procedures for Commercial Heating, Air-Conditioning, and Water-Heating Equipment, 74 Fed. Reg. 36312, 36321 (July 22, 2009).

plumbing products, commercial furnaces and water heaters, and low voltage transformers — even though those standards are already either more than six years old or approaching the six-year deadline. Consistent with EISA, DOE should take prompt action to review those product efficiency standards for which the six-year deadline has already expired, and schedule review for standards that are approaching the six-year deadline.

3. *Develop economic valuation metrics for the ENERGY STAR efficiency improvements.* This option is consistent with the comment in Section II.B.

FTA CAPITAL INVESTMENT

Agency: Federal Transit Administration (FTA)

Program: New Start
Small Starts

Funding: \$1.96 billion appropriated for FY2012

2010 Synopsis: Noting that FTA’s “New Starts” and “Small Starts” programs provide critical grants that are used to expand and modernize local transit infrastructure, our 2010 Report suggested that FTA consider revising its process for awarding these grants to encourage applications that coordinate transit investments with energy efficient and sustainably designed neighborhoods.

Developments: 1. *ANPR on Revisions to New Starts Funding Criteria.* In June 2010, FTA formally began the process of revising its process for evaluating New Starts and Small Starts applications by issuing an Advance Notice of Proposed Rulemaking (ANPR) soliciting public comment.¹⁰⁵ Although the ANPR did not propose any specific changes to these programs, FTA did note that it was considering broadening its evaluation of the environmental benefits of transit proposals to include the facilitation of sustainable development and reductions in suburban sprawl (historically, FTA had limited its consideration of environmental benefits to air quality impacts). More specifically, FTA requested input on the possibility of scoring projects according to whether they are consistent with a local or regional sustainability plan, and whether they involve sustainable construction and design practices (including third party green building certification). FTA also solicited feedback on integrating various measures of economic development impacts of proposed transit developments into application evaluations.

Options: 1. *Implement reforms to New Starts / Small Starts funding that encourage coordination of transit investment with energy efficient and sustainable design.* As noted in the 2010 Report, the sustainability of commercial and residential buildings is maximized when those buildings are situated in walkable neighborhoods with easy access to transit. FTA support is frequently a linchpin of local transit investments and can play a significant role in determining the sustainability of developments that arise around transit. The ANPR shows encouraging signs that FTA is considering broadening its analysis of proposed transit projects to take into account environmental and economic development factors. FTA should build on the

105 Major Capital Investment Projects, 75 Fed. Reg. 31,383 (June 3, 2010).

ANPR by proposing revisions to its New Starts and Small Starts funding processes that reward applicants for (1) integrating transit project proposals with development and preservation plans that require or encourage sustainably designed neighborhoods with high-performance buildings to be built near the proposed project, including properties that are affordable to low-income residents; (2) committing to incorporate sustainable design and construction practices in the transit project itself, including meeting stringent energy efficiency standards and obtaining third party green building or sustainability certification.

2. Reform regulations governing disposition of excess property to promote affordable and sustainable housing. One opportunity not covered in the 2010 Report relates to development on “excess property” that local transit agencies acquire during the process of building an FTA-funded transit project. FTA’s current regulations¹⁰⁶ require local transit agencies to dispose of that excess property for the highest possible return (with a share of the proceeds remitted back to FTA). This requirement means that local transit agencies must often forego opportunities to dedicate excess property to the development of affordable and sustainable housing near transit stations. FTA should consider amending its regulations to provide local transit agencies with greater flexibility to condition the use of excess property for affordable housing with energy efficient and sustainable characteristics (including the ability to donate the land or sell the land at a discounted value to a non-profit affordable housing developer). This policy change would expand opportunities for low and moderate-income households to enjoy the benefits of energy efficient, sustainable and transit-oriented development—ensuring that property near transit stations is developed in a manner consistent with the Administration’s policies on neighborhood livability and affordability.

HISTORIC BUILDINGS REHABILITATION

Agency: National Park Service (NPS)

Program: Rehabilitation Tax Credit

2010 Synopsis Our 2010 Report recognized that integrating contemporary energy-efficiency features and sustainable design criteria into the rehabilitation of historic structures poses unique challenges. The NPS influences the design of many rehabilitation projects through its authority to prescribe regulations for the Rehabilitation Tax Credit, which is a key source of finance for such projects. Accordingly, the 2010 Report suggested that the NPS update its guidance on enhancing the energy efficiency of historic buildings without compromising their historic character; provide expanded guidance on the incorporation of sustainable materials, renewable energy, and other sustainable design features into historic buildings; and work with DOE and EPA to expand the ENERGY STAR labeling program to historic rehabilitations.

Developments: In April 2011 the NPS released its first official guidelines on the inclusion of sustainability features into historic rehabilitation projects, as well as the first update since 1992 to its

¹⁰⁶ 49 C.F.R. § 18.31, 49 C.F.R. § 19.32

guidance on energy efficiency measures.¹⁰⁷ The new NPS guidance covers a number of critical topic areas including insulation, windows, HVAC systems and ductwork, green roofs and “cool roofs,” integration of solar photovoltaic systems and wind turbines, and features to reduce storm-water runoff. As described below, however, the guidance falls short in a number of key respects and should be amended.

Options:

1. *Actively encourage energy efficient, but historically sensitive rehabilitation.* The NPS guidance does not provide any specific targets or objectives for the energy efficiency performance of historic properties, and instead merely provides interpretations or clarifications of the NPS’ rehabilitation requirements. The NPS could encourage building owners to take more aggressive measures to address energy efficiency by recommending that rehabilitation projects result in a 30% improvement over a building’s previous performance or the average performance of buildings in the CBECS database.
2. *Amend guidance to accommodate renewable energy installations.* The NPS guidance unreasonably discourage the installation of solar, wind, geothermal, and other renewable energy equipment by specifying that such installations must not be visible from the street and may not even be located on lots adjacent to historic properties. Similarly, the NPS guidelines require that sponsors of rehabilitation projects justify to NPS the removal of fossil fuel-powered HVAC systems. These provisions of the guidance pose a barrier to the incorporation of environmentally sound, and historically sensitive, renewable energy technologies in rehabilitated properties.
3. *Provide more flexibility with respect to windows.* Windows are frequently one of the most energy-inefficient aspects of historic buildings, yet the NPS guidance allows little flexibility to replace poorly-performing historic windows with more energy-efficient models. NPS could strike a better balance between the needs of present building users and the imperative to preserve historic character by recognizing that energy performance, cost of repair, and obsolescence are legitimate grounds for replacement of fenestration.

TITLE 17 LOAN GUARANTEE PROGRAM

- Agency:** Department of Energy
- Program:** Title 17 Loan Guarantee Program
- Funding:** No appropriations provided for new loan guarantees in FY2012.
- 2010 Synopsis:** The 2010 Report noted that the Title 17 loan guarantee program has unexploited potential to support building energy efficiency and renewable energy projects.¹⁰⁸ The report suggested that DOE issue a solicitation directed at building efficiency and renewable energy. In addition, the 2010 Report proposed that DOE streamline its application procedures to facilitate aggregation

107 NPS, *The Secretary of the Interior’s Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings* (Apr. 2011).

108 See Energy Information Administration, *Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2010* at 63-67 (July 2011) (describing allocation of Title 17 loan guarantees through 2010).

of building projects or loan guarantees to financial intermediaries who would use the loaned funds to carry out efficiency projects.

Developments:

1. *Better Buildings Initiative.* One element of the Better Buildings Initiative unveiled by the Administration in January 2011 was a DOE pilot program to extend loan guarantees to building efficiency retrofits. This pilot program is consistent with the option suggested in the 2010 Report.

2. *Funding Challenges.* In the omnibus appropriations bill that passed Congress in December 2011 to fund the federal government through September 2012, DOE's loan guarantee program remains funded despite the controversies caused by the Solyndra bankruptcy. The program remains to the extent that it is revenue neutral – that is, program expenses are offset by fees and other sums received from borrowers. The 2012 funding bill also specifies that DOE cannot make a loan guarantee until there is an appropriation from Congress to cover the cost of the guarantee, and DOE also receives an up-front payment from the borrower to cover the cost.¹⁰⁹

Options:

1. *Prioritize Building Efficiency Projects.* It is unlikely that large-scale, Solyndra-type transactions will be initiated in the LG program in 2012. Accordingly, for the foreseeable future DOE should focus on deploying its existing guarantee authorities to support less costly and less risky building retrofits. To date, DOE has not mobilized its LG program resources in the building retrofit arena to the same extent as renewable or nuclear projects, even though Congress plainly included “end use efficiency” technologies within the list of Title XVII's eligible projects when the authorizing legislation was enacted in 2005. As the program re-trenches in light of Solyndra, DOE should move in the direction of using its credit support capabilities in a manner that focuses on energy efficiency in buildings. Furthermore, as recommended in the 2010 Report, DOE should also reduce the transaction costs associated with applying for a loan guarantee by ensuring that its Title 17 regulations allow for aggregation of building projects or lending to intermediaries.

2. *Explore Loan Guarantees to Support PACE Programs.* A meaningful yet manageable opportunity for DOE's LG program would be to consider how available credit enhancement mechanisms can help spur PACE programs and overcome lien priority issues. For further ideas in this regard, please consult the options offered earlier in this report regarding Fannie Mae and Freddie Mac opportunities.

3. *Take Advantage of Commercial Building Refinancing Opportunities.* Commercial real estate mortgages that were originated in 2007 and earlier, before the recession hit, will be coming due in significant waves over the next few years. For example, in 2012 alone, about \$55 billion of commercial property loans that were sold as securities will come due. Owners will look for opportunities to refinance these mortgages or sell their properties – which provide opportune points of entry into the retrofit market. DOE should leverage its loan guarantee capabilities to take maximum advantage of these events. Through the Title XVII program, credit support should be available for building owners seeking to complete re-finance transactions, with only a tranche of debt (relative to a property's total mortgage indebtedness) backed by DOE and devoted to energy efficiency capital investments. To better understand the opportunities

109 See <http://www.bloomberg.com/news/2011-12-19/commercial-mortgage-refinancing-chances-dim-as-2007-deals-mature-s-p-says.html>.

here, DOE should convene a stakeholder input session early in 2012, comprised of real estate, mortgage banker, and energy efficiency contractors serving the commercial properties sector, to explore the retrofit opportunities created by the imminent wave of refinancings and how the loan guarantee program may best support energy efficiency goals in these transactions.

IV. NEW PROGRAMS AND OPPORTUNITIES

VOLUNTARY LABELING OF RESIDENTIAL BUILDINGS

Agencies:	Department of Energy (DOE) Environmental Protection Agency (EPA) Federal Trade Commission (FTC)
Program:	Building Technologies Program (DOE) ENERGY STAR FTC Deceptive Advertising Regulations
Authority:	42 U.S.C. § 6294a (ENERGY STAR) 42 U.S.C. § 8236 (DOE authority to prescribe voluntary rating guidelines for residential energy efficiency) 15 U.S.C. § 57a (FTC authority to regulate deceptive practices)
Description:	<p>A key challenge to creating a vibrant market for energy efficient residential and commercial buildings is the lack of a standard, easily understood labeling system for conveying accurate information about the performance and expected cost savings of these buildings. Without such a label, prospective buyers and tenants are unable to determine whether and how much to value the energy efficient qualities (or lack thereof) of a given property. And in the absence of demand from buyers and tenants, prospective sellers lack an incentive to retrofit existing properties or build new properties that meet the highest possible energy efficiency standards.</p> <p>Both private organizations and the Federal government have stepped forward to attempt to satisfy the need for a uniform labeling system. However, although various private sector organizations have developed proprietary labels, no single private standard has emerged that specifically addresses energy consumption and cost-savings. This task has proven challenging because few organizations have the resources and public recognition to sponsor their own labels. Moreover, sellers of buildings have reported that they are reluctant to adopt and display labels because of FTC guidance that implies the use of such labels could constitute deceptive marketing unless the seller is in a position to scientifically substantiate the content in the label.¹¹⁰</p>

¹¹⁰ See Guides for the Use of Environmental Marketing Claims (Proposed), 75 Fed. Reg. 63,552, 63,567 (Oct. 15, 2010) (setting forth proposed

The Federal government, for its part, has taken limited steps to create a building labeling system through programs such as ENERGY STAR.¹¹¹ Unfortunately, the Federal government’s own labeling efforts have their own flaws. The ENERGY STAR label, for example, has limited application to multifamily buildings and does not reveal detailed performance information, such as the level of financial savings that a building can be expected to generate for its owners or tenants. DOE’s innovative “E-Scale” label is a more promising model for a voluntary building label, in that it displays the relative performance a property (compared to an average building “benchmark”) as well as the financial savings that the occupant of the building can expect to achieve relative to the benchmark. E-Scale is based on the widely-respected Home Energy Rating System (HERS) developed by the Residential Energy Network, which uses a software package to compare a home’s expected energy performance to that of a similarly-sized “reference” home. However, E-Scale is only available for use by certain builders who are enrolled in DOE’s Builders Challenge program.¹¹²

To be useful, any building label developed by the government should be: (1) simple and understandable for consumers; (2) based on methodologies that are both reliable and widely available, such as HERS; (3) provide a comparison of the energy efficiency of the labeled building relative to the average performance of buildings of the same type or class; and (4) estimate yearly utility savings that an occupant of the labeled building can be expected to realize relative to the average building of the same type or class.

Options:

1. *FTC Should Clarify That it is Not Deceptive to Use Building Labels Based on Government-Approved Data or Methodologies.* FTC’s proposed revisions to its Green Guides appear to be having an unintended “chilling” effect on efforts by the real estate industry to develop and adopt voluntary building labels. As noted above, these proposed revisions appear to require any entity that relies upon a third-party certification or label to independently verify or substantiate the accuracy of the label—even where the label is based upon HERS, a methodology that has been adopted by both DOE and EPA for building ratings. Few real estate agents, developers or builders are in a position to undertake this kind of technical analysis for a voluntary building label. Nor should such technical analysis be necessary for labels that are backed by government-approved methodologies for rating building performance. Yet an entity that utilizes a voluntary building label without undertaking such substantiation could

revisions to FTC’s “Green Guides.”). The proposed revisions to FTC’s Green Guides suggested that third-party certifications, seals, or labels are a form of endorsement covered by FTC’s existing Guides on the Use of Endorsements and Testimonials in Advertising (Endorsement Guidelines). The Endorsement Guidelines, in turn, require advertisers to “possess and rely on adequate substantiation” for any label or advertising message that suggests a consumer can generally expect to achieve certain results with a given product. Applied to building labels, the Endorsement Guidelines imply that developers, builders, or real estate agents may not use a label without possessing “adequate substantiation” that the content in the label accurately represents generally expected energy performance. The proposed revisions to the Green Guides further suggest that a seller may only rely upon such labels if it “ensures that the certification constitutes competent and reliable scientific evidence to support its claims.” Further, the proposed revisions go on to suggest that a seller is obligated to verify that sufficiently rigorous analyses, research, or studies independently validate all of the claims made in the certification. *Id.* at 63,567-68. These standards are potentially difficult for property sellers to meet.

111 42 U.S.C. § 6294a, which grants DOE and EPA shared responsibility for the ENERGY STAR program, explicitly authorizes labeling and “other forms of communication” about buildings. Although ENERGY STAR labels have historically taken a binary format (i.e., a product either qualifies or does not qualify for the label, and the label displays no information about relative performance or energy savings), the ENERGY STAR statute does not limit the content or format of ENERGY STAR labels. Therefore, ENERGY STAR labels could be modified for buildings to provide useful information on expected cost savings and relative performance.

112 For more information about E-Scale, see <http://www1.eere.energy.gov/buildings/challenge/energysmart.html>.

be accused of engaging in deceptive marketing. FTC should promulgate a new regulation clarifying that it is not deceptive for sellers of real estate to rely upon efficiency labels that are based on HERS or another methodology vetted by the government. Such a regulation is clearly within FTC's broad discretion to regulate deceptive marketing practices, and is a sensible step that would remove a potential obstacle to the adoption of a private sector building label.

2. *DOE or EPA Should Create a Voluntary Label, Preferably Based on E-Scale.* DOE and EPA both appear to have legal authority to establish a voluntary building label, either under the auspices of the existing ENERGY STAR program or as part of the energy efficiency research and outreach carried out in DOE's existing Building Technologies program. Indeed, the E-Scale label DOE has already developed for the Builders Challenge program is a nearly ideal model for widespread use, in that it meets the three criteria described above. Although the E-Scale label was developed for single-family dwellings, the methodologies that underlie E-Scale could be extended to multifamily buildings. Therefore, DOE or EPA should, in consultation with stakeholders, designate E-Scale (or a similar label) as a national voluntary building efficiency label for new and existing residential buildings. To build wider market acceptance, it may be desirable to promote the new label as an extension of the ENERGY STAR program, which already enjoys widespread consumer recognition and has a proven track record of influencing purchasing decisions.

REFORMING MORTGAGE LENDING STANDARDS

Agency:	Consumer Financial Protection Bureau
Program:	Truth in Lending Act Minimum Standards for Residential Loans
Authority:	Dodd-Frank Act § 1411 (to be codified at 15 U.S.C. § 1639c)
Description:	The 2010 Report recognized that reforming the process by which mortgage originators value energy efficient and sustainable properties, and assess the credit risks associated with these properties, is a crucial step towards developing a robust market. In particular, the ability of a building's occupants to repay a mortgage is enhanced when that building is designed to minimize energy consumption and is located near transit nodes and employment centers. This should be reflected in the valuation of the property and in the evaluation of the borrower's ability to repay.

After the publication of the 2010 Report, the Dodd-Frank Wall Street Reform and Consumer Protection Act gave the newly-created CFPB authority to set new standards governing how mortgage originators assess ability to repay.¹¹³ The standards must include, among other things, a consumer's "current obligations" and the "residual income the consumer will have after paying non-mortgage debt and mortgage-related obligations." In May 2011, the Federal Reserve Board of Governors, which assumed responsibility for issuing this regulation until the CFPB commenced operations, issued a proposed regulation ("Regulation Z") establishing

113 Pub. L. 111-203, § 1411(a)(2), 124 Stat. 1376, 2142 (to be codified at 15 U.S.C. § 1639c).

these standards.¹¹⁴ This proposal would not require projected energy or transportation expenses to be considered in evaluating a borrower’s ability to repay.

Options:

1. *Incorporate Transportation and Utility Expenses in Regulation Z.* CFPB should modify Regulation Z to require mortgage originators to estimate a borrower’s transportation and utility expenses as part of the “residual income” analysis. CFPB should work with experts to develop and test predictive models suitable for use in mortgage loan origination process.

REPORTING OF ENERGY CONSUMPTION DATA

Agency:

Department of Energy

Federal Trade Commission

Program:

Energy Information Administration

Authority:

42 U.S.C. § 7135

15 U.S.C. § 796

15 U.S.C. § 772

15 U.S.C. § 45

Description:

The lack of comprehensive, standardized, and publicly available data on the energy efficiency of large commercial and multifamily buildings is a key obstacle to transforming the market for highly energy-efficient buildings.¹¹⁵ Enhanced data collection would greatly assist policymakers and the private sector in assessing progress towards improved energy efficiency; help prospective buyers and tenants evaluate the energy efficiency characteristics and benefits of buildings; help building occupants identify problems in building operations and performance; and inform the development of future building standards and techniques for improving energy efficiency. Efforts to develop this data have been hindered by a lack of consensus surrounding which data elements should be collected; the cost and difficulty of gathering data from building occupants and utilities; and privacy concerns.¹¹⁶

Municipalities have already taken the lead to implement benchmarking and reporting of the energy efficiency performance of large commercial buildings. For example, New York City’s Local Law 84¹¹⁷ requires all buildings larger than 50,000 square feet to benchmark their energy consumption using EPA’s Portfolio Manager tool on an annual basis, starting in May 2011. The law obligates tenants of covered buildings to provide energy-related information upon request of the landlord, and provides for public disclosure of the benchmarking data starting in 2012. Washington, D.C. and San Francisco have also enacted similar ordinances.¹¹⁸

114 Regulation Z; Truth in Lending, 76 Fed. Reg. 27,390 (May 11, 2011).

115 See Recap Real Estate Advisors, *Multifamily Utility Usage Data: Issues and Opportunities* 5-6 (June 2011).

116 *Id. at*

117 New York City, N.Y., Admin. Code tit. 28, art. 309.

118 See Washington, D.C., Official Code § 6-1451.03; San Francisco, Cal., Environment Code ch. 20, §§ 2000-2008.

The Federal government's own data collection efforts have been far more limited. DOE's Energy Information Administration (EIA) has undertaken periodic surveys of commercial, industrial, and residential building energy consumption (the "Commercial Building Energy Consumption Survey" or "CBECS," the "Residential Energy Consumption Survey" or "RECS", and the "Manufacturing Energy Consumption Survey"), but the surveys have not been regularly updated and are based on limited samples of buildings (notably, these surveys appear to have very limited coverage of multifamily buildings).¹¹⁹ As noted above, Fannie Mae and HUD are also investigating enhanced data collection efforts.

The government, however, is not limited to these tools to track the performance of buildings that consume significant amounts of energy. The EIA's organic statute vests the agency with broad authority to collect and analyze information on energy production and consumption.¹²⁰ One of the statutory provisions defining EIA's information-gathering authority requires "all persons owning or operating facilities or business premises who are engaged in . . . major energy consumption" to provide information, data, documents and reports at the request of the Administrator, and authorizes the Administrator to "require . . . any person engaged in . . . major energy consumption" to answer any "questions, surveys, or questionnaires" as the EIA may deem necessary.¹²¹

Option:

1. *EIA Should Ensure a Robust CBECS Collection Effort.* In the bill to fund federal agencies through September 2012, Congress appropriated sufficient funds for the EIA to conduct the CBECS process this year. EIA should reach out to stakeholders to obtain input on the contents of their questionnaire; assistance to make sure that energy managers and other personnel who ultimately receive questionnaires complete them; and input on whether the lists of recipient firms sufficiently represent the varied sizes and types of buildings across the spectrum of the commercial real estate stock. CBECS has been criticized for relying on an exceedingly small sample size of buildings and collecting insufficient data on those buildings that are sampled.¹²² EIA can use its existing information-gathering authority to supplement the CBECS program by examining data sets already collected by third parties, to supplement information collected through the current process in a non-biased manner. Additionally, EIA should articulate a selective profile of buildings meeting appropriate threshold characteristics (possibly based on square footage, number of rooms, aggregate energy usage, and other variables) for which it

119 The commercial buildings survey, for example, was last published in 2003. A 2007 update to the survey failed to produce sufficiently rigorous data, and was never formally released by EIA. Shortly after the FY2011 continuing resolution was signed into law, the EIA announced that it was suspending work on the CBECS survey due to insufficient appropriations. EIA, Press Release, *Immediate Reductions in EIA's Energy Data and Analysis Programs Necessitated by FY2011 Funding Cut* (Apr. 28, 2011).

120 The EIA's information-gathering authority derives from several provisions of the United States Code that originally defined the powers of the Federal Energy Administration (predecessor to DOE). In particular, 42 U.S.C. § 7135(b) and (c) require the Administrator of EIA to perform the functions established for the Federal Energy Administration in 15 U.S.C. § 790, and exercise delegated powers of the Secretary of Energy pursuant to 15 U.S.C. § 796. 15 U.S.C. § 790, in turn, vests the Federal Energy Administration's information-gathering unit with the powers listed in 15 U.S.C. § 772.

121 15 U.S.C. § 772. As noted above, this statute originally defined the information-gathering powers of the Federal Energy Administration, which was subsumed into DOE in 1978. The statute that established DOE preserved the authority given in 15 U.S.C. § 772 and transferred it to the Secretary of Energy. *See* 42 U.S.C. § 7151(a).

122 For example, due to confusion over the terminology used in the CBECS survey, respondents appear to have reported square footage of commercial buildings in an inconsistent manner. There is also evidence that the CBECS survey does not adequately distinguish among subcategories of buildings, and omits important usage data (such as extended vacancies). *See* Anthony Buonicore, *The Formidable Challenge of Building Energy Performance Benchmarking* (Apr. 5, 2010), available at <http://bepinfo.com/images/PDF/BEPNwhitepaper-AB-3-30-10.pdf>.

believes it needs more data, and work with industry groups and real estate companies to focus efforts on collecting that data. For buildings equipped with master meters, EIA can request this information directly from building owners or operators. For buildings with individually metered units, EIA may be able to request this information from utilities or from tenants who are major consumers of energy.¹²³ To address privacy concerns, EIA is authorized by law to develop protective regulations governing information pertaining to individuals.¹²⁴

In crafting such a reporting program, EIA should seek input from, and collaborate with, organizations that have already invested considerable time and effort in determining data needs and identifying effective ways to use this data. The Residential Energy and Water Data Collaborative, for example, has published a white paper identifying critical data elements that must be collected to improve building performance analysis in the multifamily context.¹²⁵

2. *Encourage Utilities to Adopt Whole-Building Data Capture Platforms for Multi-Tenant Buildings.*

In buildings with many tenants that occupy separately-metered spaces, owners are not able to capture energy consumption throughout the entire structure. Owners of multi-tenant buildings, therefore, frequently find it difficult to benchmark whole-building performance. Further, as more jurisdictions adopt mandatory benchmarking laws, owners will find it difficult (if not impossible) to meet such mandates unless utilities provide aggregated consumption data in a manner that does not infringe on tenant privacy. Commonwealth Edison, the utility serving the Chicago area, has adopted the successful “Energy Usage Data System” (EUDS) which provides aggregated, whole-building consumption data in an automated format that can be uploaded into EPA’s Portfolio Manager benchmarking tool.¹²⁶ Significantly, ComEd accomplished this achievement at minimal cost to itself or its consumer base. ComEd has won an ENERGY STAR “Award for Excellence” from EPA in developing this innovative program.¹²⁷ In summer 2011, the National Association of Regulatory Utility Commissioners (NARUC) adopted organizational policy that supports platforms like EUDS.¹²⁸ The Energy Department and Federal Energy regulatory Commission (FERC) should assist in creating national standards for utilities to provide aggregated whole-building energy consumption data to owners. Under the authority of the Public Utilities Regulatory Policies Act (PURPA), DOE/FERC should issue guidance on “best practices” to elevate the utility industries’ awareness of EUDS and encourage more whole-building data capture platforms.

123 15 U.S.C. § 772(b) authorizes EIA to collect information from “all persons owning or operating facilities or business premises who are engaged in any phase of energy supply or major energy consumption . . .” This suggests that EIA may request energy consumption information either directly from consumers (tenants) or suppliers (utilities), as appropriate. Note that EIA’s authority to gather information from tenants is limited by 15 U.S.C. § 772(h), which requires EIA to “avoid, to the greatest extent practicable, overly burdensome reporting requirements on . . . small business concerns required to submit reports to the Administrator.”

124 15 U.S.C. § 773(c).

125 Recap Real Estate Advisors, at 25-26.

126 See https://www.comed.com/Documents/BusinessSavings_TipsGuides/EUDS_FS.pdf.

127 See http://www.energystar.gov/index.cfm?fuseaction=pt_awards.showAwardDetails&esa_id=3666.

128 See <http://www.energydataalliance.org/>

REINVIGORATE FEDERAL USE OF ENERGY SERVICES CONTRACTING

Agency: Government-wide

Program: -

Authority: 42 U.S.C. § 8253

42 U.S.C. § 8287

Description: Since 1992, the Federal government has had authority to enter into energy savings performance contracts (ESPCs) or utility energy services contracts (UESCs), in which private energy services companies or utilities carry out cost-effective packages of energy efficiency measures to generate guaranteed long-term levels of energy and cost savings. Because Federal agencies repay the cost of the improvements from savings in their energy expenses, ESPCs and UESCs provide a powerful tool for leveraging small amounts of appropriated funds into large-scale energy efficiency investments. Moreover, the involvement of an energy service company at all phases of the project (as well as the presence of a contractual guarantee of savings that accompanies most ESPCs/UESCs) ensures that energy savings are maintained over long periods of building operation. Indeed, Oak Ridge National Laboratory has determined that under realistic circumstances, ESPCs are frequently more cost-effective than traditional direct spending of appropriated funds on energy efficiency projects.¹²⁹

Unfortunately, the Federal government's use of ESPCs and UESCs has declined precipitously in the last two years, due in part to the availability of significant appropriations in the American Recovery and Reinvestment Act of 2009 for Federal building renovation projects. Stimulus funds are now fully committed, yet potentially billions of dollars in cost-effective, energy-saving retrofit opportunities still exist in the Federal government's large building portfolio. Now is the time for the Federal government to reinvigorate its ESPC/UESC programs across all agencies, and especially the Department of Defense (which alone accounts for approximately 63% of the square footage of building space occupied by the Federal government). This will require, among other things, changes in the methods used to plan for Federal building acquisitions and renovations, as well as the incentives facing individual agency employees and managers.

Options: 1. *Utilize OMB Oversight to Encourage Cost-Effective Use of ESPCs.* Because of its role in establishing government-wide budgeting and personnel policies and reviewing individual agency budget proposals, the White House Office of Management and Budget (OMB) is uniquely positioned to drive a new push for the Federal government to take advantage of ESPCs and UESCs. In particular, the President should direct OMB to develop a standardized cost-effectiveness analysis to compare and rank funding options—including ESPCs and UESCs—and require agencies to use this analysis when submitting budget proposals for major renovations or energy efficiency projects. In addition, OMB should instruct agencies

¹²⁹ See John Shonder, Patrick Hughes, and Erica Atkin, *Comparing Life-Cycle Costs of ESPCs and Appropriations-Funded Energy Projects: An Update to the 2002 Report* at vi (ORNL/TM-2006/138, 2006) (noting that even a small 0.5% annual degradation in the performance of an appropriations-funded energy efficiency project makes ESPCs more life-cycle cost effective “under most realistic circumstances.”).

that budget proposals for building retrofits will be reviewed with a view toward prioritizing cost-effective opportunities to leverage appropriated dollars. In addition, the President should direct OMB to ensure that all cost-effective retrofits identified through audits of Federal buildings be considered when determining the scope of work for ESPCs. These options would encourage agencies to proactively explore and take advantage of opportunities to utilize ESPCs and UESCs where these contracts would offer economic benefits over traditional appropriations-funded projects.

2. Create Incentives for Federal Employees to Execute ESPCs and UESCs. Although ESPCs and UESCs are highly cost-effective for taxpayers, they do involve a more complex contracting process than a traditional appropriations-funded project and, for this reason, Federal procurement officials are sometimes reluctant to explore the possibility of negotiating an ESPC or UESC. To overcome this obstacle, Federal agencies should consider setting aside small “bonus pools” that can be used to compensate Federal employees who undertake successful and cost-effective ESPCs/UESCs. This option should be implemented by means of an Executive Order instructing agencies to evaluate the establishment of such “bonus pools” and providing guidance on the terms and conditions that should apply to these incentives.

3. Direct Federal Agencies to Maximize Life-Cycle Benefits of ESPCs. 42 U.S.C. § 8287, which authorizes Federal agencies to enter into ESPCs, allows such contracts to have a maximum term of 25 years. Yet, Federal agencies implementing ESPCs often enter into much shorter contracts that implement a narrower range of life-cycle cost-effective energy efficiency measures. As part of an Executive Order directed at reinvigorating Federal use of ESPCs, Federal agencies should be instructed to adopt all measures that are life-cycle cost-effective over the maximum 25-year time horizon when negotiating ESPCs.

4. Streamline Contracting Process and Increase White House Involvement. As proposed in the 2010 Report, the White House should add a staff position within the White House Council on Environmental Quality, the Office of the Federal Environmental Executive, or OMB to monitor use of ESPCs and UESCs within Federal agencies and work with agencies to address obstacles to the use of these innovative financing arrangements. In addition, the Federal Energy Management Program (FEMP) at DOE should work to streamline the ESPC/UESC contracting process by reducing cycle time and managing the approval process.

EXECUTIVE ORDER ON FEDERAL ENERGY EFFICIENCY AND SUSTAINABILITY

Agency:	Government-wide
Program:	New executive orders building on Executive Order 13514
Option:	Our 2010 Report called attention to the need for coordinated action from the White House in key areas related to building energy efficiency and sustainability, including: mandating data collection and public disclosure of the energy and water performance of all Federal buildings; requiring all Federal buildings to be certified under a credible operations and maintenance standard (such as LEED Existing Buildings Operations and Maintenance); directing the

Office of Management and Budget to apply lower, more realistic discount rates to cost-benefit analyses of regulations dealing with energy efficiency or greenhouse gas reduction; and ensuring that implementation of Executive Order 13514 is incorporated into job descriptions and performance evaluations for Sustainability Officers. All of these options remain as valid today as when they were first released in April 2010.

This report notes below that a new Executive Order on energy efficiency and sustainability should also take steps to revive the use of energy savings performance contracts (ESPCs) within all agencies of the Federal government. This is an important addition to the options in our 2010 Report.

In addition, we suggest that a new Executive Order direct agencies to take appropriate steps to ensure that Sustainability Officers (and sustainability personnel generally) are consulted and included in the process of drafting specifications for new and rehabilitated Federal buildings. New energy-efficient systems and technologies are often omitted from building plans, in part because agency officials most responsible for sustainability are not in regular communication with engineers and procurement officials responsible for construction. Agencies should be directed by Executive Order to ensure that such bureaucratic barriers do not prevent agencies from exploiting all available opportunities for maximizing building performance. In addition, as mentioned previously, the establishment of Federal guidelines on economic valuation of green buildings should be considered.

Lastly, the Executive Order could provide that performance reviews for cabinet-level officials and their direct subordinates include an assessment of their efforts to “streamline” building energy efficiency and sustainability into agency operations, including by facilitating intra-agency coordination and communication on these issues. Develop economic valuation metrics for EDA development aid that targets

FHA INSURANCE PROGRAMS

Agency: Department of Housing and Urban Development

Program: Federal Housing Administration

Authorities: 42 U.S.C. § 12709 (Energy efficiency standards for FHA)

12 U.S.C. § 1715z-7 (Section 242)

12 U.S.C. § 1715w (Section 232)

12 U.S.C. § 1715y (Section 234)

P.L. 102-550, § 542(c)

Funding: For FY2012, FHA was given authority to Issue loan guarantees for a maximum principal amount of \$400 billion.

Description:

As noted in our 2010 Report, the National Housing Act authorizes the Federal Housing Administration (FHA) to insure mortgages for a variety of properties. In addition, 42 U.S.C. § 12709(a), which was enacted as part of EISA 2007, directs HUD to set energy efficiency standards for newly constructed FHA-insured properties that are at least as stringent as ASHRAE 90.1-2004 or 2006 IECC standards.¹³⁰ These authorities offer potential opportunities for FHA to set strong energy efficiency and sustainability standards for FHA-insured properties, as well as to provide special insurance products directed at high-performance buildings. Specific FHA insurance programs that were not discussed in the 2010 Report include:

1. *Section 242 Insurance for Hospitals and Section 232 Insurance for Other Health Care Facilities.*

Section 242(d) of the National Housing Act authorizes FHA to insure mortgages for the rehabilitation or construction of hospitals, on “such terms and conditions as [the HUD Secretary] may prescribe.”¹³¹ The statute implies that HUD is empowered to set “minimum property standards” for properties insured under this section, and also explicitly authorizes HUD to insure 90% of the cost of solar energy systems and energy conservation measures implemented as part of a renovation or new construction.¹³² Similarly broad authority is provided to FHA to insure mortgages for the construction, rehabilitation, purchase or refinancing of nursing homes, intermediate care facilities, and assisted-living facilities.¹³³ These programs are collectively quite large—in fiscal year 2010, FHA issued \$4.3 billion in insurance under the section 232 and 242 programs.¹³⁴

2. *Risk-Sharing Agreements.* Section 542(b) and (c) of the Housing and Community Development Act of 1992¹³⁵ authorized HUD to enter into risk-sharing agreements with Fannie Mae, Freddie Mac, state and local housing finance agencies, and other financial institutions to support the underwriting of mortgages for multifamily properties by those institutions through insurance, reinsurance, and other products. As recently as fiscal year 2010, these two programs insured a significant number of multifamily properties with a value of over \$300 million.¹³⁶ Because this program provides FHA with insurance authority independent of the National Housing Act, the ordinary restrictions and limitations that apply to FHA insurance under the National Housing Act do not appear to apply to the risk-sharing programs. For example, it appears that FHA has authority to insure second mortgages to multifamily projects under this program, as well as to provide insurance for higher percentages of property value than might be permitted under the National Housing Act.

3. *Section 234 Blanket Insurance for Condominiums.* Section 234 of the National Housing Act authorizes FHA to insure mortgages for the purchase of individual condominium units

¹³⁰ 42 U.S.C. § 12709(a). Specifically, the statute requires USDA and HUD to establish these standards with the input of an advisory task force representing builders, housing agencies, energy agencies, low-income housing organizations, energy efficiency advocates, and other stakeholders. The statute also requires the agencies to update these energy efficiency standards to keep pace with subsequent amendments to the ASHRAE and IECC codes.

¹³¹ 12 U.S.C. § 1715z-7(c).

¹³² 12 U.S.C. § 1715z-7(d)(2).

¹³³ 12 U.S.C. § 1715w

¹³⁴ FHA, 2010 Annual Management Report at 23-24.

¹³⁵ P.L. 102-550.

¹³⁶ FHA, 2010 Annual Management Report at 18.

within multifamily buildings, as well as to insure “blanket mortgages” for the construction or rehabilitation of new multifamily condominium buildings. The Secretary of HUD is broadly empowered to carry out this authority “in his discretion and under such terms and conditions as he may prescribe,” and is also given authority to regulate or restrict “rents, charges, capital structure, rate of return, and methods of operation” of insured properties during the period that the property remains covered by FHA.¹³⁷

Options:

1. *Establish Strong Energy Efficiency Standards for All Newly Constructed FHA-Insured Properties.*

As noted above, HUD must set energy efficiency standards for properties insured by FHA under the National Housing Act (this requirement does not apply to properties covered by the Section 542 risk-sharing agreements outlined above). Moreover, 42 U.S.C. § 12709 requires that HUD amend these standards within one year after the revision of applicable IECC or ASHRAE voluntary codes. HUD should take rapid action to implement this requirement and ensure that standards for FHA-insured properties reflect the most recent applicable voluntary codes (ASHRAE 90.1-2010 and 2009 IECC).

2. *Promote Use of Section 242, 232, and Section 234 Programs for Energy Efficient and Sustainable Construction.*

FHA should raise the profile of energy efficiency and sustainability in the section 242, 232, and 234 programs by advertising the availability of these insurance products for new construction and rehabilitation of high-performance health care and condominium facilities. To the extent feasible, FHA should also recognize the value-enhancing features of energy efficient and sustainable construction by offering more favorable insurance terms to properties that excel with respect to certain green building attributes.

3. *Establish Risk-Sharing Agreements for Energy Efficient and Sustainable Construction.*

FHA should explore the possibility of establishing new risk-sharing agreements or amending current risk-sharing agreements to provide support for energy efficient and sustainable construction, especially through flexible or innovative forms of finance (such as performance contracts or second mortgages). FHA could also ensure that such risk-sharing agreements incorporate energy efficiency and sustainability criteria that are at least as stringent as those adopted for National Housing Act insured properties under 42 U.S.C. § 12709. In establishing such risk-sharing agreements, the “Green Refinance Plus” program between FHA and Fannie Mae that was announced by HUD Secretary Sean Donovan in November 2010 could serve as a useful model.

4. *Amend FHA Underwriting and Appraisal Guidelines to Recognize Benefits of Energy Efficient and Sustainable Construction.*

Because FHA is responsible for determining financial integrity criteria for mortgages eligible to be insured, FHA has the potential to lead the way in establishing sound practices and guidelines for appraising and underwriting mortgages on energy efficient and sustainable properties. FHA should revise its lender guidelines to ensure that energy efficient and sustainable features are noted in appraisals and to the extent possible, fully and properly valued. Moreover, FHA should ensure that underwriting guidelines take account of value-enhancing efficiency and sustainability features as well as the effect of these features on the cash flow of the borrower. These guidelines could be applied across all FHA programs and need not be limited to multifamily properties. Ideally, such

¹³⁷ 12 U.S.C. § 1715y(d).

guidance would be developed in conjunction with Fannie Mae and Freddie Mac to ensure a uniform approach across the mortgage lending industry.

CAPITAL MAGNET FUND

Agency: Department of the Treasury

Program: Capital Magnet Fund

Authority: 12 U.S.C. § 4569

Funding: \$221 million appropriated to the Capital Magnet Fund’s parent program, the Community Development Financial Institutions Fund, for FY 2012 (available until Sept. 30, 2013)

Description: Established simultaneously with the National Housing Trust Fund under the Housing and Economic Recovery Act of 2008, the Capital Magnet Fund provides competitive grants administered by the Treasury’s Community Development Financial Institutions Fund for the purposes of attracting private capital to the construction of affordable housing and economic development or community service facilities. Capital Magnet Fund awards may be used, among other purposes, to establish revolving loan funds; pay for loan guarantees; capitalize affordable housing funds; and fund risk-sharing loans.¹³⁸ The program is funded by means of a levy on the GSEs,¹³⁹ which has been indefinitely suspended by FHFA. However, in FY2010, the Capital Magnet Fund received an \$80 million appropriation to finance an initial round of grants. The program’s first NOFA—announcing the availability of \$80 million in funding—was issued in March 2010,¹⁴⁰ and an interim rule governing the program was promulgated in December 2010.¹⁴¹

Under the statute creating the Capital Magnet Fund, the Treasury is charged with developing application requirements and selection criteria. These criteria must ensure a fair distribution of funds to urban, suburban, and rural areas, and must take into account other factors such as anticipated leverage of private funds and affordable housing need.¹⁴² The Treasury appears to have discretion to specify additional selection criteria beyond those provided in the statute.

Options: 1. *Apply Energy Efficiency and Sustainability Criteria to Capital Magnet Fund Projects.* Because of its size and its capacity to leverage considerable additional private dollars, the Capital Magnet Fund is well-positioned to catalyze significant new investments in energy efficient and sustainable construction. The Department of the Treasury should either (1) require applicants for Capital Magnet Funding to commit that new buildings or facilities built with support from this program meet stringent energy efficiency and sustainability requirements or (2) provide a significant competitive “edge” for applicants who commit to ensure that new buildings

¹³⁸ 12 U.S.C. § 4569(f).

¹³⁹ 12 U.S.C. § 4567(a) (requiring Fannie Mae and Freddie Mac to each set aside an amount equal to a fixed percentage of unpaid principal balances for the benefit of the National Housing Trust Fund and the Capital Magnet Fund)

¹⁴⁰ Notice of Funds Availability, 75 Fed. Reg. 12,422 (Mar. 15, 2010).

¹⁴¹ Capital Magnet Fund, 75 Fed. Reg. 75,376 (Dec. 3, 2010).

¹⁴² 12 U.S.C. § 4569(j)(2)(D).

and facilities built with Capital Magnet Fund support meet stringent energy efficiency and sustainability criteria; the amount of incentive points awarded should vary according to the level of performance the applicant commits to achieve (similar to the incentives provided by USDA to applicants for Rural Housing Service funds in the agency's most recent NOFAs, as described above).

2. *Remove Barriers to Financing Capital Magnet Fund As Soon As GSEs Are Capable of Making Required Contributions.* Given the current climate in Congress, it is unlikely that the Capital Magnet Fund will receive appropriations in the near future. Fortunately, FHFA has existing legal authority to require the GSEs to make their required contributions to the HTF. FHFA should continuously evaluate whether the GSEs are in sufficiently sound financial condition to make their required contributions, and enforce the required contribution at the earliest feasible opportunity.

ECONOMIC DEVELOPMENT ADMINISTRATION

Agency:	Department of Commerce
Program:	Economic Development Administration (EDA)
Authority:	42 U.S.C. §§ 3121 et seq.
Funding:	\$220 million appropriated for FY2012 (available until expended)
Description:	<p>Housed within the Department of Commerce, the EDA disbursed approximately \$255 million in economic development aid in fiscal year 2010, principally in the form of grants to support the expansion or construction of public works; economic development planning; and technical studies. EDA's largest programs in fiscal year 2010 included the 21st Century Innovation Infrastructure Program, which provides assistance in the form of grants and loan guarantees for new physical infrastructure (\$133 million); Economic Adjustment Assistance, a flexible funding program targeted at regions experiencing severe economic dislocation and distress (\$38.6 million); Partnership Planning, which assists local and regional organizations in developing economic plans (\$31 million); and Sustainable Economic Development, which is EDA's only program dedicated to financing energy efficient and sustainable construction (\$25 million). The Administration's 2012 budget request includes an approximately one-third reduction in the amount of assistance to be provided through the Sustainable Economic Development program.¹⁴³</p> <p>The Public Works and Economic Development Act of 1965 (PWEDA),¹⁴⁴ which authorizes and governs all of the above programs, does not explicitly prohibit EDA from requiring or encouraging energy efficiency or sustainability measures to be implemented in EDA-funded projects. Indeed, a provision of PWEDA requires states to develop "comprehensive economic development strategies" that, among other things, "enhance and protect the</p>

¹⁴³ Figures and program descriptions derived from EDA, Fiscal Year 2012 Congressional Budget Request (2011).

¹⁴⁴ 42 U.S.C. §§ 3121 et seq.

environment” in order to receive grants for public works or revolving loan funds for economic adjustment assistance.¹⁴⁵ Another provision of PWEDA authorizes EDA to set “performance measures,” which conceivably could include energy efficiency and sustainability criteria, for projects funded with EDA grant assistance.¹⁴⁶ Moreover, EDA’s current guidance to applicants for competitive funding states that applications that “encompass best practices in environmentally sustainable development” or promote job creation and business expansion in clean energy and “green technologies” should receive more favorable evaluation in funding awards.¹⁴⁷

Options:

1. *Incorporate energy efficiency and sustainability criteria into NOFAs.* Where EDA assistance will be used to develop physical infrastructure, EDA should ensure that (a) strong minimum energy efficiency and sustainability criteria are applied to projects receiving that assistance and (b) incentives (in the form of additional “points” in competitive application processes) are extended to applicants who go beyond these minimum criteria, with the amount of incentive scaled to the performance of the proposed project.
2. *Energy efficiency and sustainability in comprehensive economic development strategies.* Pursuant to its authority to regulate the submission of comprehensive economic development strategies,¹⁴⁸ and the requirement that these strategies address environmental protection and access to transportation infrastructure, EDA should ensure that energy efficiency and sustainability objectives and criteria are incorporated into comprehensive economic development strategies and that these objectives and criteria are referenced in relevant funding applications.
3. *Provide additional guidance on EDA investment priorities.* Although it is commendable that EDA has listed environmental and clean energy objectives as investment priorities that will be rewarded in competitive funding processes, EDA has not provided clear guidance on how applicants can demonstrate that they adhere to “best practices in environmentally sustainable development” or fulfill national objectives with respect to clean energy and green technologies. EDA should provide additional information on these investment priorities, setting clear and ambitious (but achievable) expectations for applicants.
4. *Develop economic valuation metrics for EDA development aid that targets efficiency improvements.* This option is consistent with the comment in Section II.B.

VETERANS AFFAIRS HOSPITALS AND HOUSING PROGRAMS

Agency: Department of Veterans Affairs

Programs: VA Hospitals

¹⁴⁵ See 42 U.S.C. § 3162.

¹⁴⁶ 42 U.S.C. § 3211(a)(1).

¹⁴⁷ EDA, *Investment Priorities*, <http://www.eda.gov/InvestmentsGrants/InvestmentPriorities.xml>.

¹⁴⁸ 42 U.S.C. § 3211(a)(14) authorizes the EDA generally to prescribe such “rules, regulations, and procedures” as “appropriate” for carrying out the provisions of PWEDA.

Homeless Providers - Capital Grant Component

Multifamily Transitional Housing

Authority:

38 U.S.C. § 2011, 2061

38 U.S.C. § 2051-2054

38 U.S.C. § 8103

Funding:

\$590 million appropriated for “major” construction projects for FY2012.

\$482 million appropriated for “minor” construction projects for FY2012

No appropriations were provided for loan guarantees for transitional housing for FY2012.

Description:

The Department of Veterans Affairs (VA) is both a nationally prominent owner and operator of hospital and healthcare facilities, and a major facilitator of financing for housing for veterans. VA policies governing the Department’s own facilities, including its network of hospitals, place a strong emphasis on energy efficiency and sustainability. In particular, VA issued a Sustainable Design and Energy Reduction Manual in April 2010 that requires all major construction projects undertaken by the VA to achieve 2 Green Globes or LEED Silver certification, and sets forth specific minimum requirements in the areas of energy performance, water consumption, indoor environmental quality, and materials sustainability.¹⁴⁹ In addition, the Department’s Directive 0055 requires an energy and water consumption assessment to be conducted on all VA facilities exceeding 50,000 square feet at least once every four years, and requires each of VA’s offices to provide monthly data on energy and water consumption.¹⁵⁰

The vast majority of VA loans and loan guarantees for housing are statutorily limited to single-family residences (including condominiums) and therefore beyond the scope of this report (although they do present promising opportunities for promoting energy efficiency and sustainability).¹⁵¹ However, VA does provide capital grants for the construction, renovation, or acquisition of facilities used by providers of homeless veterans services (known as the “Capital Grant” component of VA’s Homeless Providers program).¹⁵² The statute authorizing Capital Grants also provides VA with broad authority to “establish criteria and requirements” for grants. In addition, VA does have authority to issue up to 15 loan guarantees for multifamily transitional housing, with a total value not to exceed \$100 million, under a pilot program created in 1998;¹⁵³ presently, VA has issued only one loan guarantee pursuant to this authority (note that VA’s FY2012 appropriations removed authorization for transitional housing loan guarantees in the current fiscal year).¹⁵⁴

Options:

1. *Data Dissemination and Outreach on Application of Energy Efficiency and Sustainability Requirements to Medical Facilities.* VA has the potential to serve as a leader and entrepreneur

149 VA, *Sustainable Design and Energy Reduction Manual* (Apr. 2010).

150 VA Directive 0055, “VA Energy and Water Management Program” (January 15, 2010).

151 See 38 U.S.C. § 3710 (listing types of residences eligible for VA’s home loan guarantee program).

152 38 U.S.C. § 2011, 38 C.F.R. Part 61.

153 38 U.S.C. §§ 2051-2054.

154 VA FY2012 Congressional Submission at 2E-8.

in the application of energy efficiency and sustainability criteria to the health care sector. As VA accumulates experience with implementing energy efficiency and sustainability requirements at hospitals and other health care facilities, and collects data on energy and water consumption pursuant to Directive 0055, the Department should make its buildings data and success stories available to the public through easily accessible reports, databases, and websites. In addition, the Department should engage in targeted outreach to the broader medical community to share best practices and lessons learned.

2. *Reform Capital Grant Component and Revive Multifamily Transitional Housing Program.* VA has considerable authority to establish minimum eligibility and selection criteria for the Capital Grant component of the Homeless Providers program. VA's most recent NOFA for this program, however, does not mention energy efficiency or sustainability requirements or reward applicants who are planning to build high-performance facilities. VA should revise the program documentation to either provide additional points for applicants that meet stringent energy efficiency and sustainability criteria; establish minimum energy efficiency and sustainability requirements for applicants selected to receive Capital Grants; or both.

DEFENSE RESEARCH AND DEVELOPMENT PROGRAMS

Agency:	Department of Defense
Program:	Strategic Environmental Research and Development Program Environmental Security Technology Certification Program
Authority:	10 U.S.C. § 2901 10 U.S.C. §§ 2351 et seq.
Funding:	SERDP: \$66.4 million appropriated for FY2012 ESTCP: \$63.6 million appropriated for FY2012
Description:	<p>DOD currently manages two research programs that are focused on energy and environmental initiatives: the Strategic Environmental Research and Development Program (or SERDP, which tends to conduct research and development activities) and the Environmental Security Technology Certification Program (or ESTCP, which engages in more applied research directed at demonstrating and validating technologies). Both programs are jointly managed by the Deputy Under Secretary of Defense for Installations and Environment.</p> <p>SERDP research activities are specifically authorized in 10 U.S.C. § 2358, which directs DOD to “address environmental matters of concern” to DOD and DOE; share research, technology, and information with other government agencies and the private sector; and provide other government agencies and the private sector with data and analytical capabilities. ESTCP</p>

appears to be authorized under DOD’s broad mandate to carry out research and development in areas “of potential interest to the Department of Defense.”¹⁵⁵

Recently, DOD has designated energy and water conservation as a core research priority for ESTCP, with the goal of funding development of energy conservation and renewable energy technologies for DOD facilities, applications of energy storage and control technologies, and water conservation technologies. ESTCP has characterized DOD installations as ideal “test beds” for field-testing building technologies developed by universities, federal laboratories, the Department of Energy, and other research centers.

Options:

With DOD adopting progressively more stringent energy efficiency and sustainability mandates for its bases and other facilities, ESTCP and SERDP are attractive vehicles for funding research, development, demonstration, testing, and evaluation projects that serve the needs of DOD and the broader sustainable building community. Options for these programs include:

1. *Engage ESTCP in Design and Evaluation of Net-Zero Facilities.* As the Army, Navy and Marine Corps move to adopt “net zero” energy consumption requirements for their bases, ESTCP can and should play a key role in both funding research into techniques and technologies to meet these goals as well as rigorous data collection and analysis of the performance of “net zero” bases over time. ESTCP should also undertake extension programs to communicate “lessons learned” from the net zero initiative to the broader public through readable reports, websites, and forums with key players involved in developing, marketing and financing sustainable buildings.

2. *Collaborate With Stakeholders on Research Priorities and Vision.* ESTCP and SERDP should improve their efforts to articulate an overall research “vision” or roadmap with respect to energy efficient and sustainable buildings. Activities in this area should include publicly engaging key stakeholders in the sustainable buildings community to gather input on broad research objectives and priority funding areas; developing a public statement of these objectives and priorities; and incorporating these priorities into requests for proposals and evaluation processes for research grant applications.

DEFENSE TECHNOLOGY TRANSFER INITIATIVES

Agency:	Department of Defense
Program:	Domestic Technology Transfer (T2) Program
Authority:	10 USC §§ 2501, 2506, 2514, 2515, 2358, 2371, 2194, 2195
Description:	The Department of Defense possesses broad legal authority to carry out programs to identify and promote transfer of military technologies to civilian use—authorities which could be utilized to ensure broader dissemination of DOD technical expertise with respect to energy

¹⁵⁵ 10 U.S.C. § 2358(a)(2)(B).

efficient and sustainable buildings.¹⁵⁶ As summarized in a 1999 DOD Directive,¹⁵⁷ DOD’s powers in this regard include authority to enter into cooperative research and development agreements (“CRADAs”), education partnerships, partnerships with state and local governments, other types of cooperative agreements, and even establish monetary awards for useful military innovations.¹⁵⁸ This Directive also instructed the heads of DOD military departments and other DOD units to “ensure that domestic [technology transfer] is a high priority” by developing plans, objectives, and milestones for technology transfer activities; making technology transfer an element of job descriptions, personnel evaluations and promotion decisions; establishing cash awards for technology transfer accomplishments; implementing “marketing and outreach programs”; and providing technical assistance to state and local governments, school systems, and “other organizations.”¹⁵⁹

Option:

1. *Designate energy efficient and sustainable buildings as a priority area for domestic technology transfer.* Energy efficient and sustainable building technologies are an obvious candidate for technology transfer, because civilian use of these technologies does not have national security disadvantages and is likely to enhance U.S. energy security. As the military departments of DOD implement “net zero” initiatives and DOD as a whole continues to gain experience with building and operating high-performance building, DOD should issue a new Directive designating energy efficient and sustainable buildings as a priority area for technology transfer and instructing DOD offices and military departments to carry out appropriate programs to encourage civilian use of techniques and technologies developed within DOD. DOD offices and military departments should be required to report to the Office of the Secretary of Defense on an annual basis with respect to their progress in carrying out this new Directive.
2. *Education partnerships.* Among the activities authorized in Directive 5535.3 are “education partnerships” and outreach to school systems. DOD should consider using technology transfer funds to establish partnerships with community colleges and universities for the development of curricula and training of educational personnel, with a view to integrating DOD applications of energy efficient and sustainable building technologies into the training of engineers, designers, and builders.
3. *Cash awards.* DOD is authorized by statute to grant cash awards in an aggregate amount of no more than \$10 million per year to recognize significant achievements in research, development, and demonstration that have potentially useful military applications. DOD should consider establishing an annual cash award (drawn from its existing appropriations for research and development¹⁶⁰) for innovations in building energy efficiency and sustainability

156 This authority derives from a number of provisions of the United States Code (listed above). Chief among these provisions are 10 U.S.C. §§ 2514-2515 (requiring the Secretary of Defense to undertake technology transfer activities and establishing the Office of Technology Transition within DOD); and 10 U.S.C. § 2371 (providing DOD with flexibility to enter into broad classes of agreements in carrying out basic and applied research).

157 See Department of Defense, Directive 5535.3 (May 21, 1999); see also Department of Defense, Directive 5535.8 (May 14, 1999).

158 *Id.* at 5; see also 10 U.S.C. § 2374a (providing authorization through September 2013 for cash awards of up to \$10 million total for “outstanding achievements in basic, advanced, and applied research, technology development, and prototype development that have the potential for application to the performance of the military missions of the Department of Defense.”)

159 Directive 5535.3, at 4-5.

160 In general, this report avoids making recommendations that would require Federal agencies to reprogram significant amounts of scarce funding. However, DOD’s appropriations for research and development are both ample in size and worded in a manner that gives DOD significant discretion as to their use. The \$10 million limit on cash awards provided in 10 U.S.C. 2374a represents only 0.05% of the research

that could help the department move closer to accomplishing its “net zero” objectives or related initiatives.

MARKET TRANSFORMATION THROUGH VOLUME PURCHASES

Agency:	Department of Defense Department of Energy
Program:	Building Technologies Program Title III, Defense Production Act
Authority:	50 U.S.C. App. §§ 2061 et seq.
Funding:	\$170 million appropriated for FY2012 (of which \$150 million is uncommitted to specific purchases)
Description:	<p>Cost is a key barrier to market penetration of innovative energy-saving building technologies such as highly efficient windows, HVAC systems, or renewable energy systems. The Federal government has several mechanisms for accelerating cost reductions in these components by facilitating or directly engaging in high-volume procurement. In 2010, DOE’s Building Technologies Program demonstrated one of these mechanisms by orchestrating a “Volume Purchase Program” for R-5 highly insulating windows and low-e storm windows. Under the Volume Purchase Program, Pacific Northwest National Laboratory entered into basic ordering agreements with sellers of highly-efficient windows, under which the sellers agreed to make certain volumes of product available at fixed prices.¹⁶¹ Responsive offers are displayed on a public website and made available to the public at large. By helping buyers locate sellers of highly-efficient windows in a public and competitive forum, this program is expected to contribute to expansion of the market for windows and decreases in manufacturing costs.</p> <p>In addition to the Volume Purchase Program, which appears to be carried out using the government’s ordinary procurement authority, the President also has specific authority under Title III of the Defense Production Act to undertake market transformation through high-volume government purchases.¹⁶² The intent of Title III is to increase the supply and reduce the cost of advanced materials and technologies with national defense applications, including energy technologies.¹⁶³ Title III purchases are financed through annual appropriations to the</p>

and development funds appropriated to DOD as a whole (not including substantial research and development funds that are appropriated separately to the individual military departments). See Department of Defense Appropriations Act, 2010, P.L. 111-118, Title IV, 111th Cong. (2009).

161 See DOE, *R-5 Highly Insulating Windows and Low-E Storm Windows Volume Purchase Program* (Sept. 30, 2009); see also Pacific Northwest National Laboratory, RFP No. 121400 (Dec. 16, 2009); Pacific Northwest National Laboratory, RFP No. 163369 (Jan. 24, 2011).

162 Title III also authorizes the President to provide loans and loan guarantees; install production equipment in government or privately owned facilities; and develop substitutes for critical materials, where such activities would aid national defense. See 50 U.S.C. App. §§ 2091, 2092, and 2093(e) and (g).

163 See Executive Order 12919, § 202 (June 3, 1994) (authorizing DOE to carry out Defense Production Act functions with respect to “energy production and construction, distribution and use, and directly related activities.”)

Defense Production Fund, which are valid until expended and require no prior Congressional authorization.¹⁶⁴

Options:

1. *Expand Volume Purchase Program to Other Energy-Efficient or Sustainable Products.* DOE's Volume Purchase Program is an innovative approach to market transformation that has the added advantage of requiring no significant obligation of government funds. DOE should expand the Volume Purchase Program to other categories of energy efficiency equipment and sustainable building products, and launch a formal evaluation of the Volume Purchase Program over the coming year to develop ways of improving the program.

2. *Title III Purchases.* Acting pursuant to its delegated authority under Executive Order 12919, DOD could make high-volume purchases and purchase commitments for advanced energy efficiency equipment or components used in sustainable building construction.

¹⁶⁴ The FY2011 budget resolution appropriated \$34.3 million for Defense Production Act purchases.

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