

Written Statement of
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House Committee on Energy and Commerce,
Subcommittee on Energy Hearing
“Hearing on Saving Energy: Legislation to Improve Energy Efficiency and Storage”

February 12, 2020

Chairman Rush, Ranking Member Upton, and Subcommittee Members,

I am greatly honored to join you today on behalf of the U.S. Green Building Council (USGBC). USGBC, best known for the Leadership in Energy and Environmental Design (LEED) green building rating system, has been improving the performance of buildings in the public and private sectors for more than 25 years.

We thank the subcommittee for holding this hearing and calling attention to ways Congress can help accelerate progress on efficiency, clean energy, and building performance. We appreciate the overall direction and engagement of the Committee on important opportunities to scale technologies including energy and water efficiency in concert with renewable energy, energy storage, and microgrids, to create more resilient and livable communities and a strong clean energy economy.

Below we outline our views on key efficiency bills that are featured in today’s hearing.

1. USGBC supports H.R. 5650, the “Federal Energy and Water Management Performance Act of 2020.”

We commend the bipartisan approach in advancing the performance of the federal footprint and providing formal authorization for the Federal Energy Management Program (FEMP).

The federal government generally has been a leader in reducing energy and water consumption of its own buildings, with high-performing new construction as well as energy saving performance contracts in existing buildings. For example, the National Renewable Energy Lab (NREL) doesn’t just study these topics-- here it has put them into practice. NREL incorporates state-of-the-art energy efficiency and renewable energy technologies into its buildings, several of which are operating at net zero energy, such as the award-winning LEED Platinum Energy Systems Integration Facility. The NREL facility was built at construction costs within the regional average.

The U.S. General Services Administration (GSA), the U.S. Department of Defense (DOD), and other agencies have saved energy and water, and along the way saved many millions of dollars, through construction and leasing policies, deployment of performance contracting, other public-private partnership models, and use of third party certification. GSA has reported, for example, that sustainable building standards helped GSA avoid more than \$250 million in energy and water costs from 2008 to 2014.¹

¹ “FY 2016 Strategic Sustainability Performance Plan” (U.S. General Services Administration, Washington D.C., 2016).

Federal agencies can have an even greater impact in conserving energy and water and saving money and resources, while lowering the carbon impact of their building portfolios and providing high performing, spaces to support productivity and wellness of federal employees.

As you know, the federal government has had legislatively established energy intensity reduction goals for more than a decade. The last set of goals, which were codified in the Energy Policy Act of 2005 (EPACT) and amended by the Energy Independence and Security Act of 2007 (EISA), expired in 2015. These energy use intensity (EUI) targets had been extended by Executive Order 13693: Planning for Federal Sustainability in the Next Decade² but the more recent Executive Order 13834: Efficient Federal Operations³ revoked these requirements. This unfortunate and unnecessary decision has created a void in federal leadership in energy efficiency for the first time since agency energy targets began. These goals have made a huge difference in driving agencies to be more efficient. Indeed, in 2015, the U.S. Energy Information Administration (EIA) attributed the building energy intensity targets in EPACT and EISA as a contributing factor for energy consumption of the federal government being at its lowest level since 1975.⁴ To that end, we support the provisions of the bill that would reinstate building energy intensity reduction targets for Federal agencies at 2.5 percent annually for 10 years.

This bill also takes a common sense approach to setting water efficiency targets. As discussed above, E.O. 13834 revoked several requirements for federal facilities that were established or extended in E.O. 13693. The elimination of water consumption reduction targets in public buildings and lands owned by the federal government falls into this category. This is a missed opportunity to conserve water and save money, especially when agencies are making great strides to reduce consumption. Indeed, according to data collected by the U.S. Department of Energy (DOE), potable water use in covered federal agencies in fiscal year 2018 has been reduced by 27.2 percent when compared to 2007 baselines.⁵ Water consumption for landscapes and other outdoor purposes has been reduced by 37 percent in 2018, when compared to 2010 baselines.⁶ We support the provisions of the legislation that would legislatively set a 2 percent reduction target (1) for potable water consumption and (2) for industrial, landscaping, and agricultural water consumption for 10 years.

² [“Executive Order 13693 of March 19, 2015: Planning for Federal Sustainability in the Next Decade” \(Executive Office of the President, Washington D.C., 2015\), page number, available at: https://www.federalregister.gov/documents/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade.](https://www.federalregister.gov/documents/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade)

³ [“Executive Order 13834 of May 17, 2018: Efficient Federal Operations” \(Executive Office of the President, Washington D.C., 2018\), page number, available at: https://www.federalregister.gov/documents/2018/05/22/2018-11101/efficient-federal-operations.](https://www.federalregister.gov/documents/2018/05/22/2018-11101/efficient-federal-operations)

⁴ [Rebecca George and Mary Joyce, “Energy consumption by U.S. government at lowest level since at least 1975,” www.eia.gov, Independent Statistics and Analysis: U.S. Energy Information Administration, February 4, 2015, https://www.eia.gov/todayinenergy/detail.php?id=19851.](https://www.eia.gov/todayinenergy/detail.php?id=19851)

⁵ Source: “Federal Agency Potable Water Use per Gross Square Foot, FY 2007 and FY 2018,” [www.doe.gov](https://ctsedweb.ee.doe.gov/Annual/Report/FederalAgencyPotableWaterUsePerGrossSquareFootComparedToFY2007.aspx), U.S. Department of Energy: Energy Efficiency & Renewable Energy, accessed on (February 6, 2020), <https://ctsedweb.ee.doe.gov/Annual/Report/FederalAgencyPotableWaterUsePerGrossSquareFootComparedToFY2007.aspx>.

⁶ Source: “Federal Agency Industrial, Landscaping, and Agricultural Water Use,” [www.doe.gov](https://ctsedweb.ee.doe.gov/Annual/Report/FederalAgencyIndustrialLandscapingAndAgriculturalWaterUse.asp), U.S. Department of Energy: Energy Efficiency & Renewable Energy, accessed on (February 6, 2020), <https://ctsedweb.ee.doe.gov/Annual/Report/FederalAgencyIndustrialLandscapingAndAgriculturalWaterUse.asp>.

I would note that accomplishing these energy and water goals can be supported through energy or utility performance contracts, which often require no direct appropriations from the Federal government. One such example of this successful public-private partnership is the update to the Weaver Federal Building. The U.S. Department of Housing and Urban Development (HUD) worked with Honeywell on the execution of a performance contract that lowered the energy usage of the building by 47 percent.⁷ These energy savings were achieved through a series of measures, including improvements to the envelope of the building, replacement of mechanical equipment, and lighting upgrades. The project is estimated to save HUD \$90 million over the 19-year term.⁸ The Weaver Building, which is now LEED Silver certified, also features water conservation measures and indoor air quality improvements.

Provisions of H.R. 5650 can assist federal facilities, campuses, and land to better utilize green infrastructure and stormwater management, bolstering the stormwater runoff requirement of EISA 2007. Such measures can increase the resilience of federal property while reducing strain on local waterways, storm drains, and wastewater systems. These approaches can also have the added benefit of reduced carbon emissions by reducing the need for potable water (including the energy used for producing, treating, and pumping that water), and can reduce wastewater treatment related emissions as well.

We also appreciate that the bill explicitly authorizes the FEMP at DOE. This small but impactful program within DOE is critical in helping all agencies of the federal government use energy related resources more wisely. The trainings, technical assistance, evaluations, and oversight it provides is invaluable through-out the federal footprint. We would note that the authorization for FEMP in H.R. 5650 is shorter than the bipartisan Senate counterpart S. 1857. **Given the variance of reauthorizations for DOE, we would recommend the authorization be extended to ten years.**

2. USGBC supports provisions of H. R. 3962 the “Energy Savings and Industrial Competitiveness Act (ESICA) of 2019.”

A. Code Development and Implementation:

We support the bipartisan, consensus-based, energy code provisions contained in H.R 3962. Section 101 in the bill strengthens the ability of national model codes to make a difference in safe, energy efficient homes and commercial buildings. Model codes are currently certified, adopted, and used in most states and other units of government around the country. These model codes help make the largest consuming sectors of energy, homes, and buildings more efficient while allowing key stakeholders like builders, code officials, manufacturers, and consumer groups to participate in the development process.

Building codes in the United States are and will continue to be regulated at the state and local level. The federal government has a small but important role in providing technical review and analysis as states consider the adoption and utilization of building codes. The adoption of modern building codes helps generate significant cost-savings to homeowners, tenants and business owners over the life of a building while reducing energy consumption. We urge the committee to support Section 101 providing clear direction for the Department of Energy to encourage and support code adoption including providing

⁷ [“HUD—Headquarters Showcase Energy Project” \(U.S. Department of Housing and Urban Development, Washington D.C.\), 1-2.available at: https://archives.hud.gov/news/2016/pr16-175-HUD-HQShowEngyProj.pdf](https://www.hud.gov/news/2016/pr16-175-HUD-HQShowEngyProj.pdf)

⁸ Ibid.

technical assistance and report on impacts of codes on saving energy and life cycle costs. These provisions will help states understand the benefits of updating to model codes, and how they positively impact their communities.

The Federal government can also help support implementation of codes. Many local and state governments lack adequate resources to educate the construction industry and building owners on changes to code, as well as to train inspectors or to invest in strategies to increase code compliance. Insufficient training and education can leave homeowners and owners and operators of commercial buildings with uncertainty regarding the safety and efficiency of the building. We support Section 102 of the bill to assist states and local governments in executing education, adoption, and enforcement of local codes. Additionally, sections 111 and 112 support training and workforce development related to the construction field, from builders to engineers.

B. Appraisal and Underwriting Standards:

Section 434, commonly known as the “SAVE Act,” seeks to improve the energy efficiency of homes by providing a voluntary means of financing energy efficient features and improving the accuracy of mortgage underwriting by federal mortgage agencies.

Innovations from manufacturing and builders are constantly bringing new energy efficient products, technologies, and features to homes but, the current mortgage underwriting and appraisals process do not fully consider the costs and value of energy efficient features in a home. As a result, the consumer may not benefit from these important money and energy-saving aspects in the mortgage. This is unfortunate as studies suggest that energy efficiency is associated with lower mortgage-lending risk. In 2013, a study by the University of North Carolina – Center for Community Capital examined actual loan performance data of about 71,000 ENERGY STAR and non-ENERGY STAR-rated single-family home mortgages to assess whether residential energy efficiency was associated with lower default and risks. The study found that default risks are on average 32 percent lower in energy-efficient homes, controlling for other loan determinants.⁹

C. Coordination of energy retrofitting assistance for schools, Energy-efficient and energy-saving information technologies, and Energy efficient data centers:

Sections 121, 301, and 302 have been well vetted by the committee and have passed the House of Representatives on several previous occasions with bipartisan support.

3. USGBC recommends changes to the Energy Performance Requirement for Federal Buildings provisions of H.R. 3962:

Sections 421-423 would modify and replace existing federal building energy efficiency standards, including repeal of the existing fossil fuel phase-out; revising Federal Building energy efficiency performance standards in reference to model building energy codes; and revising building energy intensity requirements. While these changes generally will improve efficiency activity, we believe section 433 of EISA could have positive impact on the Committee’s goals through modification. To that end, we recommend moving to a goal of zero energy buildings or a zero-energy portfolio. Such an

⁹ [“Research Report on Home Energy Efficiency and Mortgage Risks,” \(UNC Center for Community Capital, Institute for Market Transformation, Chapel Hill, 2013\), 2.available at: https://www.imt.org/wp-content/uploads/2018/02/IMT_UNC_HomeEEMortgageRisksfinal.pdf](https://www.imt.org/wp-content/uploads/2018/02/IMT_UNC_HomeEEMortgageRisksfinal.pdf)

approach would give the federal agencies more flexibility in how they manage energy use at each individual building in their portfolio, while advancing greenhouse gas reduction goals. In addition, since virtually none of the Section 433 rules have been promulgated by DOE, and given the huge technological shifts since it was enacted over a decade ago, it is appropriate to change the metrics and timing of these goals to enable the federal government to make real progress in this area.

As described above H.R. 5650 contains water reduction targets for industrial, landscaping, and agricultural purposes and improvements to storm water management for federal buildings. Given the important conservation and financial savings of these provisions, should the Committee focus on an energy package or use H.R. 3962 as a primary vehicle, we would encourage the additional water reduction and green infrastructure provisions to be included in this bill or other comprehensive energy legislation that addresses federal building efficiency.

About USGBC

USGBC is a nonprofit organization dedicated to transforming the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous world. We are best known for our successful Leadership in Energy & Environmental Design (LEED) green building certification system. In addition to LEED, we leverage our education, credentials, events, communications, and policy advocacy activities to drive sustainable and high performing buildings, campuses, and communities that improve the quality of life for all. Through these programs, we support building owners, operators, and tenants from the private and public sectors in meeting their goals for spaces that save energy and water, support occupant health and productivity, reduce impacts on the climate, and incorporate resilience.

USGBC has more than 9,000 business, organizational, and government members, and many additional individual members. Our business membership includes the full range of the building sector, including builders of all sizes, product manufacturers, professional firms, and real estate owners and firms, as well as health care, major retail corporations, hospitality, financial services and insurance companies. More than 200,000 individuals around the globe have LEED credentials, including LEED AP and Green Associate.

About LEED

Since its establishment in 2000, LEED has become the most successful voluntary, consensus-based private market-driven, high-performing green building program in the country, with more than 64,000 commercial and institutional projects that have achieved LEED certification and another 49,000 projects underway. In addition, there are more than 394,000 residential units currently certified and many more registered. LEED has bolstered the U.S. construction sector and created new industries that have converged into a multibillion dollar, domestic, high-performing building industry.

LEED gives building owners and operators the tools they need to have a measurable effect on their buildings' performance, with a holistic life cycle approach driving achievement of sustained savings. LEED works by establishing prerequisites and optional credits in key categories, including integrative process, location and transportation, sustainable sites, water, energy, materials and resources, and Indoor environmental quality, as well as rewarding innovative strategies and attention to priority regional issues. Achieving LEED certification requires satisfying all prerequisites and earning a minimum

number of credits. The levels of certification reflect the number of points earned: Certified (40–49 points), Silver (50–59 points), Gold (60–79 points), and Platinum (80+ points).

To reflect building industry best practices, LEED has updated following processes that ensure the highest levels of openness, inclusion, and transparency. LEED committees are populated by a diverse group of technical and market experts who donate their time and expertise to advance the system.

LEED is designed to address the unique needs and challenges of a variety of different building and space types. It currently includes 21 different market sector adaptations. Projects such as warehouses and distribution centers, data centers, laboratories, hotels and motels, existing retail, existing schools, existing multifamily, and mid-rise residential buildings are specifically addressed within LEED. The LEED rating system addresses new construction, major renovation, and existing buildings. Because optimizing operations on an ongoing basis is critical to achieve savings and benefits, projects are encouraged to recertify periodically; USGBC has invested in systems to support and streamline recertification.

LEED seeks to engage building projects with industry-best practices and deliver superior outcomes for the built environment. LEED's flexible, credit-based structure allows project teams to pursue a tailored benefit package that best suits the project's location, climate zone, building type, budget, and market positioning, while minimum prerequisites across all categories assure threshold performance. Third-party review and verification offer accountability and transparency for performance outcomes. Complementing LEED, we recently introduced LEED Zero certifications, which recognize buildings that have achieved net zero carbon, net zero energy, net zero water, or net zero waste. LEED Zero is a performance-based certification indicating the achievement of net zero in operations over a 12-month period.

Business Case

LEED has transformed how the building industry and the public consider sustainability in real estate. The private sector has embraced LEED in recognition of the strong business case for green building. It has been demonstrated through many studies that green buildings can save money on a life-cycle basis, as energy and water savings pay back quickly and add value. Beyond these direct utility savings, studies have documented a number of financial benefits for businesses and supported the proposition that LEED-certified buildings with lower operating costs and better indoor environmental quality are more attractive to many corporate, public and individual buyers.

Businesses understand that their biggest investment is in the human resources that work in those buildings. By providing spaces that are comfortable, high air quality that allows focus and high cognitive function, and features such as daylight and ample ventilation, employees are poised to be more productive and healthier than those working in conventional buildings. High quality, health-supporting buildings help attract talent as well; since we spend about 90 percent of our time indoors, people naturally want to feel confident interior spaces are good for them. These considerations can translate into increased sales and rent prices and improved lease-up rates for green buildings.

For example, in one Department of Energy (DOE) funded study, a researcher from the Wharton School reviewed over 50 studies examining the impact of energy efficiency and green labeling on building

valuation and completed a “meta-study” of the literature.¹⁰ The report provides evidence of substantial price and rent premiums that are associated with sustainable buildings in the commercial sector. The team reviewed studies that investigate the impact of certifications such as LEED and ENERGY STAR using state of the art methodologies based on econometrics combined with current real estate industry data to identify the relationships between green building practices and value. On average, these econometric studies establish value premiums of 6% for rents and 15% for prices for buildings with LEED and Energy Star labels. The research found evidence of multiple economic benefits of LEED and ENERGY STAR, such as improvement in net operating income (NOI) by both (1) reducing energy costs (which represent 25% of the operating expenses) and (2) increasing rents by reducing vacancy and by increasing a tenant’s willingness to pay higher rents due to a higher worker productivity and a desire for “green” space and the reputational advantages; and a decrease in the Cap Rate, indicative of lower risk.

Another study of some 26,000 office buildings, found that certified office buildings, on average, continue to have higher rental, occupancy and pricing levels.¹¹

Resilience

High-performing, efficient sustainable buildings are the first step towards resiliency, since they require less energy and water to maintain operations and reduce stress on local grids and water infrastructure. LEED projects are rewarded for incorporating such resiliency-supporting features such as the use of durable materials, careful site selection, rainwater collection, demand response, grid islanding, maximal energy efficiency, on-site renewable energy generation, and more. These approaches can help not only LEED buildings become more resilient, but also their surrounding communities.

A 2018 study by the University of Texas at San Antonio focused on how LEED v4: New Construction specifically addresses building resilience. The study, presented at the National Institute for Building Sciences (NIBS) Building Innovation Conference, identified 14 types of natural disasters relevant to the built environment and then analyzed how LEED v4 credit requirements enhance building resilience against these adversities¹². The study concluded that LEED v4 credits and prerequisites provide a multitude of opportunities to enhance resilience. Specifically, the study found that 64.8% of all credits contribute to increased resilience against flooding, and 63% of credits enhance resilience to hurricanes or typhoons¹³.

Examples of LEED certified projects that have demonstrated exceptional resilience qualities include an interior office space in San Juan, Puerto Rico that survived and thrived in the aftermath of a hurricane; an apartment building designed to rehabilitate and support formerly homeless veterans; and a large corporate headquarters building designed to withstand hurricane-strength winds.

¹⁰ Susan Wachter, *Valuing Energy Efficient Buildings* (2013), supported by the Consortium for Building Energy Innovation (CBEI) sponsored by the U.S. Department of Energy, available at: <http://cbei.psu.edu/wp-content/uploads/2016/07/Valuing-Energy-Efficient-Buildings.pdf>

¹¹ Nils Kok and Rogier Holtermans “On the Value of Environmental Certification in the Commercial Real Estate Market” (University of Southern California, (2017)), available at: https://lusk.usc.edu/sites/default/files/working_papers/Working_Paper_Value_of_Environmental_Certification_in_the_CRE_Market.pdf

¹² Sandeep Langar, Ph. D., and Suchismita Bhattacharjee, Ph. D., “Focus of resilience within Building Rating Systems (BRS) LEED 4.0 Review,” presented at Building Innovation 2018 (January 9, 2018).

¹³ Ibid

To further support project teams in enhancing resilience, USGBC now offers a resilience-focused rating system, RELi, as well as several resilient design pilot credits in the LEED system. The RELi rating system, originally developed by the Institute for Market Transformation to Sustainability, aligns with LEED, while expanding the focus on proven strategies and methods. For example, RELi requires assessment and planning for acute hazards, preparedness to mitigate against them, and designing and constructing for passive survivability.

USGBC partnered with the Institute to synthesize LEED resilient design pilot credits with RELi's Hazard Mitigation and Adaptation credits, thereby strengthening the alignment and compatibility of LEED and RELi for projects. The LEED resilient design pilot credits are currently available to all new construction projects. The credits include Assessment and Planning for Resilience; Design for Enhanced Resilience; and Passive Survivability and Back-up Power During Disruptions. Building resiliently – and building back “better” – deliver significant financial benefits, as well as protecting life and property. A 2019 study by the National Institute of Building Sciences (NIBS) found that each \$1 spent on mitigation activities saves between \$4 and \$11 in response and recovery costs¹⁴. By incorporating resilient strategies, especially via LEED certification, projects are more sustainable, durable, healthier, and better for the overall community. Indeed, the National Mitigation Investment Strategy, released by the Federal Emergency Management Agency, recommends using LEED as a common measure to aid in decision-making for mitigation investment.¹⁵

¹⁴ National Institute of Building Science, Natural Hazard Mitigation Saves: 2018 Interim Report.

¹⁵ Mitigation Framework Leadership Group, “National Mitigation Investment Strategy,” U.S. Department of Homeland Security (August 2019): 9, available at: <https://www.fema.gov/media-library-data/1565706308412-19739d7deeca639415cc76c681cee531/NationalMitigationInvestmentStrategy.pdf>.