

Written Statement of  
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House Committee on Energy and Commerce,  
Subcommittee on Energy

Hearing  
"Building a 100 Percent Clean Economy: Pathways to Net Zero Industrial Emissions"

September 20, 2019

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 engaged in reducing buildings' contribution to climate change throughout our 25 year history.

We thank the Subcommittee for holding this hearing and calling attention to ways the Congress can help accelerate progress on buildings.

We applaud the Committee in its leadership and vision in adopting the 100x50 target. Achieving a 100 percent clean economy by 2050 reflects the science – embodied in the IPCC's [1.5 degree report](#) last fall – showing not only the risks from changing the climate, but that we can reduce the most severe impacts by acting decisively now.<sup>1</sup> The good news is that we can do this. We recognize the goal is ambitious; buildings are a place we can get started, and everyday Americans, businesses and families, can see immediate benefits. We have much knowledge already, especially in the buildings sector, and there are opportunities to use policy to scale the implementation of technologies already in the market, while continuing research, development, and deployment in areas needed.

In sum, to meet the climate goals needed to protect our future, we need to ensure that throughout the country, building owners, operators, and occupants have the opportunity to benefit in this transition; to improve their buildings, saving money, conserving resources, and building value, while decreasing greenhouse gas, or carbon, emissions as well. Giving businesses and individuals the information and tools to fill gaps, providing financial incentives to overcome market barriers, and leveraging the federal agencies to demonstrate low carbon high performing buildings, are some of the policy options available, that make sense for business and economic reasons, while making progress towards our emission reduction goals.

**New buildings** can be designed, built, and operated to be net zero carbon, using such technologies as well insulated building envelopes; highly efficient energy and water systems; onsite renewable energy generation; alternative or renewable energy heating, cooling, and water heating; and integration with electric grids as they also move towards clean energy.

In fact, we are seeing a huge increase in buildings recognized as net zero energy, now at [over 600](#) emerging or verified in the U.S. We're excited to see the school sector in particular embrace net zero concepts, with examples such as nearby Arlington's Discovery School, which has been so successful the County has two other net zero schools in the pipeline. Net zero is available to homes as well, for example

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<sup>1</sup> IPCC, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.*

in the [Depot Neighborhood](#) of Traverse City, Michigan, where Habitat for Humanity chose to pursue Net Zero Energy Housing because it reduces the lifecycle cost with “little-to-no utility bills each month which allow families to focus their income on important things like education and supporting local businesses.”

The emissions related to the materials, products, and energy used in the construction process are getting more attention, and there is progress here as well. Sometimes referred to as “embodied carbon,” these impacts are relatively small compared to operations over the life cycle of a building, but may be proportionately significant in the near term, including in the time horizon of 2030 and 2050. Companies like [Big River Steel](#) in Arkansas are lowering their emissions using state of the art technologies to produce steel more energy efficiently than competitors, giving it a business advantage. And companies like Johnson Controls and Schneider Electric not only invest in manufacturing more efficient equipment, but also in their own facilities; notably, each was recognized by DOE for [reducing energy consumption by 26%](#) over 7 to 8 years.

Achieving improvement in **existing buildings** is critically important as well. In developed economies like ours, more than half of the buildings that will be in use in 2050 are [already built](#). Here there are many opportunities to improve envelopes with insulation, update building energy and water systems, modernize control systems, and implement other retrofits.

These actions have valuable **co-benefits** for owners, occupants, and communities more broadly. For example, retrofitting of existing buildings saves owners and operators money on a life cycle basis, from energy and water savings and often more durable materials and equipment that last longer. Renovations done properly can improve indoor environmental quality to support wellness and comfort of employees and residents. Increased indoor environmental quality in turn benefits the economy, such as with increased productivity, fewer lost work days, and fewer emergency room visits. Importantly, renovating buildings creates local jobs, ranging from trades and construction workers, to engineers and architects.

These benefits are felt locally, and directly. For example, a local TV station in Rockport, Texas related the “silver lining” that when families faced rebuilding after Hurricane Harvey, they did so with the city’s updated building requirements, such as insulated windows, and as a result, families are saving money on their bills. As quoted in the [story](#), one family “looked at our electricity bill, and we are using 46% less electricity than we did before the storm.”

Moreover, net zero energy and net zero carbon buildings are **more resilient**, and will more readily be able to maintain operations or return to service more quickly after a storm. We know this from examples like one of our member’s office in Puerto Rico, which had been renovated to meet sustainability goals. Following the devastation of Hurricane Maria, the Álvarez-Díaz & Villalón (AD&V) office space returned to a fully functional work space within a few days, a feat not typical in the area at the time. Because of this quick recovery, the office also served as an informal community gathering place and a temporary command center.

The Federal government has numerous tools and we support a **broad suite of strategies** to accelerate this work. These fall into three categories:

- (1) Federal leadership in its own building portfolio
- (2) Federal collaboration with state and local government
- (3) Federal programs targeting the private sector or economy wide change

As outlined below, we see many opportunities to increase the impact of these approaches, in ways that support a robust economy, save money, provide high quality, livable, and healthier spaces, and create jobs here at home, while accelerating low and zero carbon buildings practices.

## Increase Impact in Federal Buildings

The federal government generally has been a leader in its approach to its own buildings. For example, the National Renewable Energy Lab doesn't just study these topics, 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.

GSA, 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 and 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.<sup>2</sup> Please refer to my June 11, 2019 testimony before the House Committee on Transportation and Infrastructure, [Subcommittee on Economic Development, Public Buildings, and Emergency Management](#) for additional information on energy efficiency and resiliency in the Federal agencies.

Federal agencies can have even greater impact in conserving energy and water, 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. **Broadly speaking, key policies to accelerate federal building decarbonization include setting goals; tracking and reporting progress by agencies; updating building energy requirements and adding net zero operations targets; eliminating barriers such as counterproductive time limits on clean energy contracts; and ensuring adequate resources.** Specific recommendations include those highlighted below.

- **Federal agency goals** for key metrics such as energy use, water consumption, renewable energy, and efficiency investment such as performance contracting, should be continued to ensure all agencies are engaged in and benefit from efficiency.
- Updating the **Federal energy efficiency performance standards**, established by the Department of Energy for all agencies, would help reduce federal energy intensity and associated carbon emissions.
- Such metrics and updated standards are included in provisions such as those in **S. 1857, Federal Energy and Water Management Performance Act of 2019** and **H.R. 3962, Energy Savings and Industrial Competitiveness Act of 2019**.
- Federal agencies can be encouraged to attain **net zero operations at key facilities**, to showcase American innovation as well as serve as hubs and operations centers. Phased in goals for agencies to achieve net zero operations at a percentage of their portfolio, with flexibility to prioritize facilities, could help their progress.
- Federal facilities can also support the transition to electric vehicles (EV) with provision of **EV charging stations** for employees and where appropriate, the public. Combined with renewable energy generation, this can over time achieve significant carbon reductions.
- For leases, there is opportunity to strengthen the applicability of and compliance with **efficiency and green lease provisions**, and to further ensure cost-effective efficiency measure requirements are implemented.
- Federal facilities, campuses, and land, can further utilize **green infrastructure** and stormwater management to reduce strain on local waterways, storm drains, and wastewater systems, building off of what is required under EISA 2007 for new development. These approaches reduce 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

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<sup>2</sup> GSA, [2015 Strategic Sustainability Performance Plan](#).

emissions as well. Legislative direction and goals for applying these strategies, such as provided in **S.1857** could be helpful.

- Several contracting provisions could also be updated to reflect current conditions and opportunities. Federal agency achievement related to renewable energy could be increased with extension of allowable timeframes for power purchase agreements, as provided in **H.R.932 - Renewable Energy Certainty Act**. Agency use of **Utility Energy Service Contracts** provisions could also benefit from an extension in permissible contract length, while their use of **Energy Savings Performance Contracts** could be increased with specific directives and clarifications, such as in **H.R.3079 Energy Savings through Public-Private Partnerships Act of 2019**.
- Ensuring consistent use of **life cycle analysis** could be valuable to support Federal agency decision-making.
- With respect to Federal planning, we support continuation of **agency sustainability plans**, along with tracking and reporting, and are pleased to see that the recently issued Implementing Instructions for Executive Order 13834 include these critical requirements. The agency scorecards are also important and highlight some specific areas for further attention. These could potentially be expanded to incorporate additional metrics.
- Ensuring adequate continued funding for the **GSA Office of High Performing Green Buildings** is key to continued progress, as well as authorization of and funding for **FEMP** as in **S. 1857**, which plays a critical role along with GSA in supporting government-wide energy and water efficiency and sustainability, for buildings and government operations. FEMP is a hub for best practices and provides services to help agencies implement improvements, including procurement through energy savings performance contracts, utility energy service contracts, and distributed energy. Important, FEMP has also developed tools for tracking and reporting GHG emissions associated with building operations.

### **Target Collaboration with State Government**

The Federal government also has an important role in collaborating with state governments to advance building performance, including encouraging low and zero carbon buildings. **Approaches to engaging with states include increasing building standards applicable to construction that uses federal funding; establishing incentives for low carbon buildings in competitive grant programs; offering targeted programs to spur low carbon retrofit and construction of public buildings; supporting State Energy Offices; providing tools and technical assistance; and supporting leadership and peer to peer networks.**

Specifically, Congress can help advance state and local government actions to decarbonize buildings, such as through:

- **Federal financial assistance programs to states** can be aligned to support high efficiency construction – through the use of baseline requirements and competitive criteria. Specifically, when federal programs provide funding for construction or renovation, ensure that the outcome is highly energy and water efficient, and to the extent possible, incorporates low and zero carbon strategies and practices. For example, past allocations of HUD CDGB-DR funds have required funded new construction for replacement buildings to be green certified, to ensure highly efficient and quality outcomes. And, the Disaster Recovery Reform Act enacted about a year ago incentivizes state and local governments receiving funds to implement modern building codes. More could be done using green building systems, energy efficiency standards and net zero energy and net zero carbon buildings to systematically ensure that across the country, federal funds are pushing this transformation and demonstrating what is possible.

- Likewise, where there are **existing competitive grants for state and local governments**, Federal programs can incentivize deeper reductions in carbon and achieving net zero energy or carbon, by awarding more points for applications that commit to higher tiers of performance.
- Financial support can be focused towards improving performance of state and local buildings, such as through Private Activity Bonds as provided in the **Public Buildings Renewal Act (H.R. 1251)** or directly through programs like the Energy Efficiency and Conservation Block Grant Program as would be reauthorized in **H.R. 2088** and the Energy Efficient Public Buildings grant program as would be reauthorized in **H.R. 2119**.
- Supporting states in implementing policies like the benchmarking provision in **H.R. 2119**, as passed by this Committee, is another valuable tool that helps provide building teams with information on energy performance and comparison against peers, and is proven to lead to increases in efficiency.
- Support for state energy offices is also critical, as these offices are on the front line working with Governors, agencies, and others to craft and implement state specific policies impacting building energy use as well as opportunities for building-grid interaction, distributed energy resources, and planning for resiliency. This program includes the **Weatherization Assistance Program** which has helped low income families save millions on energy bills. We thank the Committee for supporting the House-passed increase for DOE **State Energy Program (SEP)** SEP to \$70 million for FY'20, as well as the SEP reauthorization bill (**HR 2114**) passed earlier this month.
- Providing adequate resources and direction to **DOE's Energy Efficiency and Renewable Energy (EERE)** division and to **EPA's ENERGY STAR** programs helps state and local governments as well as the private sector, with a range of programs from the highly utilized and successful ENERGY STAR Portfolio Manager system for buildings, as well as the Better Buildings program, with industry-specific best practices and technical support. Committee direction to ensure that appropriated funds are properly and timely spent and that the offices are fully staffed is also helpful.
- EERE's **Building Technologies Office** also plays an important role with programs focused on buildings, including research and development; we encourage increased attention to late state deployment of building efficiency. Additional funds and programs targeting building-grid integration, distributed energy storage, electrification of heating and cooling (including RD&D) and EV charging at buildings would provide further opportunities to leverage state and local governments in transitioning to the low carbon economy through buildings.

### **Enable the Private Sector**

Federal action can also help open up and advance decarbonization of buildings throughout the private sector. As noted above with respect to state projects, when Federal funds are used for private projects, **building standards should be used to ensure maximum benefit from that investment; and incentives for low carbon buildings can be used in competitive grant programs. Targeted financial incentives; tools and technical assistance; engaging in key initiatives such as the National Energy Efficiency Registry; and leadership and peer to peer networks are additional ways the federal government can enable and accelerate faster building carbon reductions economy wide.**

- Existing Federal funding programs should be leveraged to advance deep efficiency in all sectors and all states.
- Where there are **existing competitive grants for private organizations**, Federal programs can incentivize deeper reductions in carbon and achieving net zero energy or carbon, by awarding more points for applications that commit to higher tiers of performance.
- With the Low Income Housing Tax Credit (LIHTC), for example, some states such as Georgia and Colorado require ENERGY STAR or green building certification for funded housing, while

others require little beyond code. S.1703 and **H.R. 3077, the Affordable Housing Credit Improvement Act (AHCIA) of 2019** would expand and strengthen this housing credit, a proven tool. This important expansion and update could be leveraged in such a way to incentivize highly efficient, low carbon construction.

- Any infrastructure package should look for ways to ensure that any construction or renovation is done to maximum energy and water efficiency, take advantage of opportunities to add renewable energy generation and EV charging, and integrate with the power grid and /or district energy systems, where applicable. In addition, infrastructure investments should consider the role of construction phase carbon emissions, including the embodied carbon of materials. Tools to help projects understand these impacts and make informed selections are available and can be more broadly used. A number of these recommendations are included in **H.R.2479, Leading Infrastructure for Tomorrow's America Act (LIFT America Act)**.
- Updating and making permanent key tax incentives such as the **179D Energy Efficient Buildings tax deduction**, which expired in 2017 will help support building owners and investors in retrofitting existing buildings, as well as in constructing new above-code buildings. Importantly this deduction has included performance criteria, incentivizes whole building efficiency, and requires verification.
- For homeowners, the **H.R. 2043: Home Owner Managing Energy Savings (HOMES) Act of 2019** would provide rebates for owner investment in improving efficiency of homes up to 4 units.
- Engaging the private sector in training and developing the workforce of the low carbon economy is another key area. Efforts such as **H.R. 1315: Blue Collar to Green Collar Jobs Development Act of 2019** and Sections 304 and 111 **the Energy Savings and Industrial Competitiveness Act**.
- Funding to increase the number of qualified residential energy efficiency workers to support ENERGY STAR for Homes ratings, in areas with underrepresentation of such qualified services, could be beneficial.
- Supporting improved function of the **financial sector** in recognizing low carbon buildings, which are lower risk. Federal action in this area could include expanding the impact of green mortgage products and reduced mortgage insurance premiums; as well as potentially targeted challenge grants to support private sector efforts to provide useable home energy information to homebuyers. Considering state and local building energy codes, as well as compliance, in establishing risk-based mortgage insurance rates, could be effective.
- Similarly, accounting for energy costs in home lending can help homeowners as well as incentivize efficiency investment in home sellers, such as provided in the **SAVE Act provisions in H.R. 3962, Energy Savings and Industrial Competitiveness Act of 2019**.

Thank you for the opportunity to provide information to the Subcommittee on this important topic.

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#### 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.<sup>3</sup> 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 whole building, 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 is 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 and 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.

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<sup>3</sup> USGBC data, as of May 2019. The commercial and institutional category includes all non-residential building types and some mixed use and high rise residential.

## 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 “metastudy” of the literature.<sup>4</sup> 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.<sup>5</sup>

## 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 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.

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<sup>4</sup> Susan Wachter, Valuing Energy Efficient Buildings (2013), supported by the Consortium for Building Energy Innovation (CBEI) sponsored by the U.S. Department of Energy, <http://cbei.psu.edu/wp-content/uploads/2016/07/Valuing-Energy-Efficient-Buildings.pdf>

<sup>5</sup> Nils Kok and Rogier Holtermans, of the University of Southern California. "On the Value of Environmental Certification in the Commercial Real Estate Market (date) <https://lusk.usc.edu/research/working-papers/value-environmental-certification-commercial-real-estate-market>.



A 2018 study by the University of Texas at San Antonio focused on how LEED v4: New Construction specifically addresses building resilience.<sup>6</sup> 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 adversities. 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 typhoons.

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.

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 costs.<sup>7</sup> By incorporating resilient strategies, especially via LEED certification, projects are more sustainable, durable, healthier, and better for the overall community

## Exports

Global markets see growth for high performing, energy efficient buildings and the products and services that support their development and operation. Goods and services touching on clean energy, energy efficiency, resilience and increasingly, buildings and infrastructure related IT and data, are a growing area of the U.S. economy. These sectors provide an already impressive number of jobs for U.S. citizens including many high quality manufacturing and construction jobs. According to the IEA, the global market for energy efficiency in buildings grew by 9% from 2014 to 2015 to \$388 billion.<sup>8</sup> A 2016 study found that global green building continues to double every three years.<sup>9</sup>

Private and public sector support for energy efficiency and sustainability within the U.S. has enabled a thriving industry, in turn creating a huge export market for U.S. made building products and services. The U.S. Department of Commerce projected a \$39 billion export market for the building sector in 2018, with

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<sup>6</sup> 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).

<sup>7</sup> National Institute of Building Science, [Natural Hazard Mitigation Saves: 2018 Interim Report](#).

<sup>8</sup> International Energy Agency (IEA), Energy Efficiency Market Report 2016.

<sup>9</sup> Dodge Data & Analytics, SmartMarket Report: World Green Building Trends 2016: Developing Markets Accelerate Global Green Growth (2016).

focus on sustainable, energy efficient goods and services.<sup>10</sup> Commerce identifies the global demand for sustainable construction as a major driver for the demand for US products and services; with China number 3 in importing American building products.

This strong export market for products such as wood products, windows and doors, insulation, HVAC, insulation, plumbing and glass all increase good jobs here in the U.S. As Commerce observes, with increased global interest in smart, resilient, and efficient buildings, “U.S. building products are competitive...U.S. manufacturers have much to offer global markets that recognize increasing building performance.”<sup>11</sup>

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<sup>10</sup> U.S. Department of Commerce, International Trade Administration, 2016 Top Markets Report: Building Products and Sustainable Construction, A Market Assessment Tool for U.S. Exporters (2016).

<sup>11</sup> Id.