2020 LEADERSHIP AGENDA

For Existing Commercial And Multifamily Buildings

SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

DOE/EE-1494

The 2020 Leadership Agenda for Commercial and Multifamily Buildings was developed as a product of the State and Local Energy Efficiency Action Network (SEE Action), facilitated by the U.S. Department of Energy/U.S. Environmental Protection Agency. Content does not imply an endorsement by the individuals or organizations that are part of SEE Action working groups, or reflect the views, policies, or otherwise of the federal government.

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Letter from the U.S. Department of Energy and the U.S. Environmental Protection Agency

As we turn the calendar to 2016, it is worth reflecting on the historic progress that is being made improving the energy efficiency of America's buildings:

- Federal Recovery Act investments made through the Energy Efficiency Conservation and Block Grant program are reducing energy bills for Americans by an estimated $5.2 billion and helped create or retain more than 62,000 jobs nationwide;
- The Energy Department's Better Buildings Challenge – now in its fourth year – has saved $840 million in energy costs and generated $5.5 billion in private sector commitments to advance energy efficiency;
- The U.S. Environmental Protection Agency's ENERGY STAR program has enabled the energy benchmarking of more than 35 billion square feet of U.S. real estate. Over 20 years, ENERGY STAR has helped businesses and organizations across the country save more than $100 billion and reduce close to 900 million metric tons of greenhouse gases.

Additionally, the nation's building energy codes and appliance efficiency standards are saving more energy than ever before; building energy performance information is more accessible and transparent than at any point in history; and American scientists, engineers, and entrepreneurs are working harder than ever on the next generation of energy-saving technologies. The future of energy efficiency has never been brighter.

None of this remarkable progress is possible without the dedicated commitment and leadership of America's state and local governments. Our cities, counties, and states are on the front lines of reducing wasted energy in buildings, doing everything from adopting building energy codes and setting community-wide sustainability goals, to crafting bold policies and programs that remove financial barriers to energy efficiency, train our workforce for clean energy jobs, and save millions of taxpayer dollars each year by improving the energy efficiency of government buildings. Why are state and local governments investing in energy efficiency? To make their communities more affordable, livable, sustainable, clean, and prosperous. They understand that harnessing energy efficiency opportunities creates jobs, reduces pollution, makes homes and workplaces more comfortable, and puts money back in the pockets of their residents and businesses.

That's why we're excited to present the *2020 Leadership Agenda for Existing Commercial and Multifamily Buildings*. A product of the State and Local Energy Efficiency (SEE) Action Network – a national forum convened by DOE and EPA that provides energy efficiency guidance and resources to state and local decision makers – the Leadership Agenda defines the baseline energy efficiency actions that states and communities can take by 2020 to demonstrate national leadership. Developed collaboratively by state and local officials, energy efficiency experts, and real estate practitioners, we believe the Leadership Agenda can help unite the energy efficiency priorities of cities, counties, states – as well as related support by philanthropic foundations, businesses, and energy efficiency organizations – around a shared vision for state and local government-led energy efficiency progress in the buildings sector over the next four years.

We hope the ideas presented in the Leadership Agenda will support your work making America's state and local communities more energy efficient, and we look forward to even greater progress in the years ahead.

Sincerely,

Kathleen Hogan
Deputy Assistant Secretary for Energy Efficiency
U.S. Department of Energy

Sarah Dunham
Director, Office of Atmospheric Programs
U.S. Environmental Protection Agency

Letter from the SEE Action Network Existing Commercial Buildings Working Group Co-Chairs

Speaking from first-hand experience managing energy efficiency projects for local governments, we know that there are very real barriers to improving energy efficiency in our states and communities. We also know that city, county, and state leaders from across America are hard at work developing and implementing policies and programs to overcome these barriers.

The *2020 Leadership Agenda for Existing Commercial and Multifamily Buildings* was conceived to help states and communities establish policies to achieve their climate and energy goals. Developed collaboratively by state and local government leaders from across America – ranging from the City of Portland, ME, to the state of Utah, to the County of Kaua'i, HI – the Leadership Agenda will help define baselines for progress; strengthen market demand for energy efficiency; make building energy data meaningful; and expand opportunities for partnership among stakeholders. It leverages the best policies and programs being implemented across our nation to create a blueprint for state and local energy efficiency action that is greater than the sum of its parts.

We'd like to thank the SEE Action Existing Commercial Buildings Working Group, along with the numerous other contributors to this document, for their time and effort. We believe the Leadership Agenda can serve as an important tool to support greater energy efficiency progress in our state and local communities. Now is an exciting time to take action!

Sincerely,

Carolyn Sarno Goldthwaite
Senior Program Manager, High Performance Buildings
Northeast Energy Efficiency Partnerships (NEEP)

Eric Coffman
Chief, Office of Energy and Sustainability
Department of General Services
Montgomery County, Maryland

Acronyms

ACEEE— American Council for an Energy-Efficient Economy

Ci—city

Co—county

DOE—U.S. Department of Energy

ECB WG—Existing Commercial Buildings Working Group

EIA— Energy Information Administration

EPA—U.S. Environmental Protection Agency

PACE—property assessed clean energy

REN—Regional Energy Network

S—state

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Introduction

Background – Progress and Potential

Policymakers, business leaders, philanthropic funders, and environmental organizations are deeply invested in improving the energy efficiency of U.S. buildings, and for good reason. America's massive built environment accounts for more than 40 percent of nationwide energy consumption and contributes more than 38 percent of U.S. carbon emissions.[1] The nation's total utility bill runs to more than $300 billion annually.[2] Buildings within the nation's 100 largest metropolitan areas consumed 24 quadrillion Btu in 2010, equal to the total primary energy consumption of France and Germany combined.[3]

Energy efficiency achievements in the built environment over the past few decades are substantial. U.S. energy intensity (the amount of energy used per real dollar of gross domestic product) has declined by 50 percent since 1980, thanks in part to stronger building energy codes and appliance standards, consumer energy efficiency education programs, increased federal investment in energy efficiency technologies and grid modernization, and the establishment of clean energy standards for utility companies.[4]

Yet, the opportunity is still enormous. Economy-wide energy efficiency improvements could unlock $1 trillion in energy cost savings over a decade, according to a 2009 report by McKinsey & Company.[5] A similar study in 2012 by Deutsche Bank and The Rockefeller Foundation found that improving the energy efficiency of U.S. homes and buildings constructed before 1980 could create 3.3 million cumulative job-years of employment.[6] Energy efficiency can make homes more affordable, healthy, and comfortable for millions of Americans; reduce operating expenses for millions of businesses; improve the reliability of the U.S. electric grid; create valuable new markets for products and services; and put people to work upgrading buildings. Quite simply, energy efficiency can make America cleaner, more affordable, and more competitive.

Summary

Leadership by state and local governments is critical to unlock national energy efficiency opportunities and deliver the benefits of efficiency to all Americans. But related to building energy efficiency, what will it mean to be a public sector leader over the next several years? What are the energy efficiency solutions that cities, counties, and states are implementing today that will make their communities more affordable, livable, healthy, and economically competitive?

The SEE Action Network *2020 Leadership Agenda for Existing Commercial and Multifamily Buildings* establishes a benchmark for state and local government leadership on improving the energy efficiency of buildings and seeks two-way collaboration among state, local, and federal officials. It defines a suite of innovative, yet practical policies and programs for policymakers to consider implementing by 2020, focusing on six important areas:

1. **Strengthen market demand for energy efficiency**
2. **Unlock data related to buildings and energy**
3. **Expand public-private partnerships and intergovernmental collaboration**
4. **Improve access to capital for energy efficiency improvements**
5. **Improve the energy efficiency of publicly owned facilities**
6. **Adopt and implement strong building energy codes.**

[1] Energy consumption Information from U.S. Energy Information Administration (EIA). Frequently Asked Questions. Accessed Jan. 4, 2016. Greenhouse gas emissions data from EPA U.S. Greenhouse Gas Inventory Report: 1990-2013.
[2] Energy expenditure information from U.S. EIA 2009 Residential Energy Consumption Survey (RECS), CE2.6, and 2003 Commercial Buildings Energy Consumption Survey, Table C2A.
[3] U.S. MSA energy consumption data from Georgia Institute of Technology, "Sustaining the City: Trends in Energy and Carbon Management in Large US Metros." American Council for an Energy-Efficient Economy (ACEEE) Summer Study Proceedings. 2014. Energy consumption data for France and Germany from U.S. EIA International Energy Statistics.
[4] Energy intensity statistics from: *Energy Efficiency in the United States: 35 Years and Counting.* ACEEE. June 2015.
[5] *Unlocking Energy Efficiency in the U.S Economy.* McKinsey & Company. 2009.
[6] *United States Building Energy Efficiency Retrofits: Market Sizing and Financing Models*. Deutsche Bank and The Rockefeller Foundation. 2012.

While many states, cities, and counties are showcasing their leadership with strong programs and policies in these areas, others have yet to fully embrace and promote energy efficiency within the buildings sector, where cost-effective opportunities to reduce wasted energy are abundant. The Leadership Agenda is intended to serve as a leadership baseline—rather than a ceiling—that identifies energy efficiency actions that make sense for all of America's communities and states to consider. These actions will be most powerful when they are designed and implemented by government leaders collaboratively, helping unite the energy efficiency priorities of cities, counties, states—as well as related support by philanthropic foundations, businesses, energy efficiency organizations, and federal agencies—around a shared vision for energy efficiency progress in the buildings sector over the next four years.

Development

The ideas presented in the Leadership Agenda were developed jointly by members of the SEE Action Network Existing Commercial Buildings Working Group and the Leadership Agenda Development Committee, composed of state, local, and county policymakers; national energy efficiency experts; real estate practitioners; and leaders from the building energy efficiency services sector. The Leadership Agenda was reviewed by additional experts from the public and private sectors.

Using the Leadership Agenda

The Leadership Agenda identifies actions that will help state and local governments improve the energy efficiency of existing commercial and multifamily buildings within their communities, as well as their own facilities. It focuses on actions that are innovative today, but are likely to be best practices by 2020. The Leadership Agenda does not propose actions related to new buildings, industrial facilities, or single-family residential homes and does not focus on utility programs and policies. It should not be used as a comprehensive list of energy-efficiency policies and programs that may be implemented by a state or local government or a utility.

Some of the actions identified by the Leadership Agenda are most relevant to a particular level of government (state, county, or city), and are noted by one of three designations:

- S where states can lead
- Co where counties can lead
- Ci where cities can lead.

Actions that are equally relevant for each level of government carry all three designations.

Execution of the actions identified by the Leadership Agenda will be different depending upon local conditions in states and communities across America. The Leadership Agenda is not intended to be an implementation guide. Guides and products produced by the SEE Action Network and other organizations that discuss relevant implementation issues are noted throughout the Leadership Agenda.

2020 Leadership Agenda Worksheet for State and Local Policymakers

This worksheet highlights the key energy efficiency policy and program recommendations identified in the Leadership Agenda. Detailed descriptions of each policy and program recommendation are referenced in the full Leadership Agenda.

1) STRENGTHEN MARKET DEMAND FOR ENERGY EFFICIENCY

- ☐ **Promote the measurement and transparency of building energy performance**
  Establish voluntary or mandatory energy benchmarking programs for public and private buildings that facilitate greater awareness and transparency related to the energy performance of buildings.
- ☐ **Establish energy-efficient leasing standards for government agencies**
  Identify energy efficiency requirements for public agencies to lease and occupy space, such as ENERGY STAR certification; the presence of a credentialed energy manager on facilities staff; the energy-efficient build-out of the tenant space; and/or LEED certification.
- ☐ **Encourage sub-metering practices for tenant spaces**
  Educate commercial tenants to ask their landlords for sub-metered spaces and energy billing based on actual consumption. Explore financial incentives for property owners to sub-meter tenant spaces.
- ☐ **Support appraiser training on incorporating energy efficiency into asset valuation**
  Partner with appraisal associations and nonprofit groups to develop training to help appraisers identify energy-efficient aspects of buildings and understand energy-related property certifications.

2) UNLOCK DATA RELATED TO BUILDINGS AND ENERGY

- ☐ **Improve property owner access to whole-building energy consumption data**
  Work with utilities, property owners, and regulators to produce changes in utility policies and procedures that provide building owners with access to whole-building energy consumption data.
- ☐ **Improve consumer energy data standardization and mobility in the marketplace**
  Work with utilities and regulators to simplify and standardize energy usage information for consumers and the service provider community. Enable consumers to easily transfer their energy usage information to service providers.
- ☐ **Improve government understanding of buildings in the community**
  Within a given jurisdiction, collect information on the total number of commercial and multifamily buildings; the square footage of each building; year constructed; tenancy (single-tenant or multi-tenant); and type of ownership (owner-occupied or investor owned).
- ☐ **Share datasets with partners that can perform deeper analysis**
  Empower experts from universities, nonprofit and research groups, national laboratories, and other organizations to analyze city-held data related to buildings and energy.

3) EXPAND PUBLIC-PRIVATE PARTNERSHIPS AND INTERGOVERNMENTAL COLLABORATION

- ☐ **Establish voluntary energy efficiency leadership programs**
  Develop programs that recognize stakeholders for making commitments to improve the energy efficiency of their buildings.
- ☐ **Create energy efficiency "exchanges" among local governments**
  Develop peer-to-peer learning networks that facilitate best practices, collaborative planning, and shared progress.
- ☐ **Establish state-led leadership programs for local governments**
  Create clean energy or energy efficiency leadership and recognition programs for their cities and counties, setting minimum criteria for participation and helping promote progress at the local level.
- ☐ **Facilitate greater energy efficiency partnership and planning with utilities**
  Form collaborations among state and local governments, utilities, and state regulators to undertake joint planning on energy efficiency policies and programming.

4) IMPROVE ACCESS TO CAPITAL FOR ENERGY EFFICIENCY IMPROVEMENTS

- **Map all energy efficiency solutions available within a state and assess options**
  Understand the financial needs of communities and identify the mechanisms available within a state to reduce the upfront costs of energy efficiency, including utility incentives and rebates, utility on-bill financing or repayment programs, energy savings performance contracts, "green" banks, revolving loan funds, unsecured loans, credit enhancements, tax credits, PACE programs, and others. Work with local experts in the energy efficiency and financial space to determine the best options.
- **Promote energy-aligned leasing in multi-tenant buildings**
  Convene stakeholders to facilitate basic changes to lease contracts between tenants and landlords that distribute the costs and benefits of energy efficiency equitably between the parties.

5) IMPROVE THE ENERGY EFFICIENCY OF PUBLICLY OWNED FACILITIES

- **Communicate short-term and long-term goals related to public building energy efficiency**
  Develop and articulate energy efficiency goals and planned actions to the public, and allocate appropriate budget for successful execution.
- **Conduct energy benchmarking on all public facilities and make information publicly available**
  Assess the energy performance of public facilities and make the results accessible to taxpayers.
- **Explore energy services performance contracting**
  Determine the feasibility of energy services performance contracting to improve the energy efficiency of public facilities, including by assessing potential legal and regulatory barriers.
- **Require public facilities managers to hold strong energy efficiency credentials**
  Adopt requirements for all public facilities managers to hold credentials that prove their competency in managing facility energy performance.

6) ADOPT AND IMPLEMENT STRONG BUILDING ENERGY CODES

- **Adopt the most recent version of the model commercial building energy conservation code**
  Approve new versions of model energy codes for statewide implementation, and create opportunities for the adoption of stronger energy codes by considering "stretch" codes for local jurisdictions.
- **Support energy code implementation and enforcement**
  Ensure major building energy renovation projects are subject to energy code requirements. Train code inspectors to understand and enforce energy codes, especially as newer codes are adopted.

The 2020 Leadership Agenda for Existing Commercial and Multifamily Buildings

The SEE Action Network *2020 Leadership Agenda for Existing Commercial and Multifamily Buildings* Leadership Agenda identifies innovative, yet practical policies and programs that can help city, state, and county policymakers improve the energy efficiency of their buildings and make their communities more affordable, livable, healthy, and economically competitive. The actions identified by the Leadership Agenda are organized into six clusters.

Strengthen Market Demand for Energy Efficiency

Part of making energy efficiency business as usual in America involves real estate consumers consistently demanding buildings that use less energy. Government leaders can help strengthen market demand for energy-efficient buildings by taking the following actions:

A. Promote the Measurement and Transparency of Building Energy Performance S Co Ci

Many commercial business tenants, real estate investors, and apartment renters do not have access to energy efficiency information when they transact property. This limits their ability to factor energy efficiency into their decision-making and prevents real estate markets from valuing energy-efficient property, constraining demand for energy efficiency. Programs that facilitate building energy benchmarking using the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR Portfolio Manager benchmarking tool and the subsequent disclosure of energy-related information to the market have been implemented by more than 30 state and local governments nationwide, as well as the federal government. Studies by EPA and the California Public Utilities Commission have correlated benchmarking with energy savings and greater enrollment by property owners in utility energy-efficiency incentive and rebate programs.[7] Preliminary research by Resources for the Future found that mandatory benchmarking and disclosure programs in several cities have contributed to citywide reductions in energy consumption.[8]

Resources and Example Programs

- SEE Action Existing Commercial Buildings Working Group (ECB WG) report: *Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language*
- SEE Action ECB WG fact sheet: *Energy Benchmarking, Rating, and Disclosure for Local Governments*
- EPA ENERGY STAR fact sheet: *National, State, and Local Governments Leveraging ENERGY STAR*
- U.S. Department of Energy (DOE): *New York City Benchmarking and Transparency Policy Impact Evaluation Report*
- City of Philadelphia: Building Energy Benchmarking Program
- City of Minneapolis: Commercial Building Benchmarking and Transparency Program
- City of Boston: Building Energy Reporting and Disclosure Ordinance

B. Establish Energy-Efficient Leasing Standards for Government Agencies S Co Ci

City, county, and state government agencies that lease space in privately owned buildings should identify energy-efficiency requirements for tenancy. Such requirements may include ENERGY STAR certification, the presence of a credentialed energy manager on the facilities staff, the energy-efficient build-out of the tenant space, and Leadership in Energy and Environmental Design (LEED) certification. Ensuring that government agencies occupy energy-efficient buildings reduces taxpayer-funded energy expenses and builds the market for energy-efficient property.

[7] Energy savings information from: *DataTrends: Benchmarking and Energy Savings.* U.S. EPA. Oct. 2012. Utility program information from: NMR Group and Optimal Energy. "Statewide Benchmarking Process Evaluation." April 2012.
[8] *Can Benchmarking and Disclosure Laws Provide Incentives for Energy Efficiency Improvements in Buildings?* Resources for the Future. March 2015.

Resources and Example Programs

- SEE Action fact sheet: *High-Performance Leasing for State and Local Governments*
- U.S. General Services Administration: Green Lease Policies and Procedures
- State of Washington: Leasing Requirements in Privately Owned Buildings
- State of Florida: Leasing Requirements in Privately Owned Buildings

C. Encourage Sub-Metering Practices for Tenant Spaces S Co Ci

In building metering configurations where a building has only a single meter (common in office and retail property), tenants are billed for their energy usage by the landlord as part of their rent. In this scenario, energy bills are typically calculated based on the square footage of tenant spaces instead of by actual consumption, meaning that both the tenant and the landlord have poor visibility into the actual energy consumption of individual spaces within the building. Additionally, tenants have no incentive to use less energy because their energy bill is not tied to their own consumption. As a result, in many cases neither party is empowered to manage energy consumption and improve efficiency. Promoting tenant sub-metering overcomes this obstacle by enabling a tenant and the landlord to understand energy consumption patterns. A 2009 study led by the commercial real estate services firm CB Richard Ellis found that metering tenant spaces separately contributed to building energy usage reductions of greater than 20 percent.[9] Governments can promote sub-metering by educating tenants to ask their landlords for sub-metered spaces and individual energy billing based on actual consumption or by providing incentives to property developers and owners to equip spaces with sub-meters.

Resources and Example Programs

- Research paper by CB Richard Ellis and University of San Diego Burnham-Moores Center for Real Estate: *Do Green Buildings Make Dollars and Sense?*
- New York City Local Law 88 (lighting upgrades and sub-metering)
- DOE Federal Building Metering Guidance
- U.S. General Services Administration resources on sub-metering
- EPA Successes in Sustainability: Landlords and Tenants Team Up to Improve Energy Efficiency

D. Support Appraiser Training on Incorporating Energy Efficiency into Asset Valuation S Co Ci

The energy efficiency of the physical elements and operations of a building directly impact expected energy expenditures for property owners and/or tenants. Additionally, energy efficiency designations such as the ENERGY STAR certification have been shown to improve the market competitiveness of a building. However, these aspects are commonly overlooked by appraisers when assigning property value, both for tax assessments and property sales. Governments can partner with commercial appraisal associations and nonprofit organizations to develop energy efficiency training that helps appraisers identify energy-efficient aspects of buildings and stay current with energy-related property certifications. They can also hold meetings with appraisal practitioners to understand industry needs and the best way to provide support.

Resources and Example Programs

- Appraisal Institute Valuation of Sustainable Buildings Professional Development Program and Commercial Green and Energy Efficient Addendum
- Earth Advantage Tools and Training on Commercial Building Valuation (in partnership with DOE)

[9] *Do Green Buildings Make Dollars and Sense?* CB Richard Ellis and University of San Diego Burnham-Moores Center for Real Estate. 2009.

- Institute for Market Transformation report: *High-Performance Buildings and Property Value*
- DOE Better Buildings Alliance Market Solutions Team on Appraisals & Valuation

Unlock Data Related to Buildings and Energy

Property owners and consumers need reliable, easily accessible energy information to support decisions to invest in building energy-efficiency upgrades, and policymakers need data on buildings and energy consumption to inform the development of energy efficiency goals, policy and program design, and sustainability planning. Government leaders can leverage data to help achieve energy efficiency outcomes in both the public and private sectors by taking the following actions:

A. Improve Property Owner Access to Whole-Building Energy Consumption Data S Ci

Many commercial and multifamily building owners cannot access energy consumption data for tenants within their buildings. When tenants are billed directly by utilities for their energy usage, owners are frequently unable to assemble energy data for their entire building, leaving them with fragments of usage data that prevent energy benchmarking and other basic energy management strategies. Many states and cities have successfully worked with their utilities to produce voluntary changes in utility policies that provide building owners with greater access to energy consumption data for their buildings. In some cases, states and cities have adopted laws requiring such changes.

Resources and Example Programs

- SEE Action Existing Commercial Buildings Working Group (ECB WG) report: *A Utility Regulator's Guide to Data Access for Commercial Building Energy Performance Benchmarking*
- DOE Better Buildings Energy Data Accelerator Program
- EPA ENERGY STAR fact sheet: Utilities offering data solutions to help customers benchmark
- Commonwealth Edison (Chicago, IL) Energy Usage Data System
- Puget Sound Energy (Seattle, WA) MyData System
- Eversource Energy Reporting and Disclosure Portal
- Rocky Mountain Power Resource Advisor

B. Improve Consumer Energy Data Standardization and Mobility in the Marketplace S

Commercial and apartment renters, as well as multifamily condominium owners, often fail to fully understand their energy bills and how that information can be used to inform energy-efficiency actions. This is especially problematic for customers served by multiple utilities that provide billing information in different formats. The Green Button initiative, led by DOE, is a national effort to simplify and standardize energy usage information for consumers and the service provider community, and help consumers make energy efficiency improvements. A similar effort, Smart Meter Texas, provides a single platform for consumers and service providers to access energy information from four different utilities. Each of these initiatives improves the standardization and mobility of energy data and empowers consumers and businesses to use that information to improve energy efficiency. Governments can help educate their state utility regulators on data-related barriers that challenge energy efficiency, and work with them to put in place programs and policies that promote greater energy data standardization and mobility.

Resources and Example Programs

- Smart Meter Texas program
- U.S. Department of Energy Green Button initiative
- San Diego Gas & Electric (San Diego, CA) Green Button Connect My Data program

- Commonwealth Edison (Chicago, IL) Green Button program

C. Improve Government Understanding of Buildings in the Community S Co Ci

Today, many state and local governments lack a basic understanding of the characteristics of buildings in their communities, limiting their ability to develop impactful energy efficiency programs and target specific programs (such as property assessed clean energy [PACE] financing) at specific audiences. By combing data from tax records, permitting, utilities, and third-party information sources such as CoStar Group, governments can construct an accurate picture of their commercial and multifamily building stocks and deliver better energy-efficiency programming. Specifically, governments should construct a database that includes the total number of commercial and multifamily buildings, the square footage of each building, year constructed, tenancy (single-tenant or multi-tenant), and type of ownership (owner occupied or investor owned). Governments that have assembled and analyzed these data have subsequently developed energy-efficiency programs that are tailored for specific building segments.

Resources and Example Programs

- DOE Standard Energy Efficiency Data Platform
- City of Philadelphia Benchmarking Data Visualization Map
- City of Chicago 2014 Building Energy Benchmarking Report
- City of Seattle Energy Benchmarking Dashboard

D. Share Datasets with Partners that can Perform Deeper Analysis S Co Ci

Experts from universities, local nonprofit and research organizations, and DOE-affiliated national laboratories can support state and local governments with broader analyses of real estate and energy data. This includes leveraging other data sets to investigate the impacts of energy efficiency on housing affordability, local economic competitiveness, resiliency, public health, and other important areas. Cities such as New York, Seattle, and Chicago have developed partnerships with local stakeholders to conduct these types of analyses, making their information more actionable.

Resources and Example Programs

- City of San Francisco and Urban Land Institute Greenprint Center for Building Performance analysis on buildings and energy
- City of New York, New York University, and University of Pennsylvania analyses on buildings and energy
- City of Seattle, EMI Consulting, and New Buildings Institute analysis on buildings and energy
- UCLA and Los Angeles County Energy Atlas insight into relationship between demographics, geography, and attributes of building performance
- ICLEI – Local Government for Sustainability USA ClearPath energy and greenhouse gas emissions inventory tracking and management tool

Expand Public-Private Partnerships and Intergovernmental Collaboration

Achieving ambitious state and local energy efficiency goals cannot be accomplished without engaged communities and meaningful partnerships among cities, counties, states, and utilities. Government leaders can create and expand opportunities for collaboration by taking the following actions:

A. Establish Voluntary Energy Efficiency Leadership Programs S Co Ci

Voluntary programs that recognize stakeholders for their commitment and leadership on energy efficiency are rapidly expanding. Programs often include commitments to energy efficiency goals and actions such as energy

benchmarking, and frequently involve building ownership and management companies. Some jurisdictions are expanding leadership challenges to major business tenants. Governments should also explore the feasibility of recognition programs that seek to recognize residential renters who locate in energy-efficient apartment communities.

Resources and Example Programs

- City of Denver Lease for Efficiency Challenge
- City of Atlanta Better Buildings Challenge and City of Los Angeles Better Buildings Challenge
- Urbana-Champaign ENERGY STAR Challenge
- Salt Lake City Project Skyline
- Envision Charlotte
- Architecture 2030 – 2030 Districts

B. Create Energy Efficiency "Exchanges" among Local Governments Co Ci

Local governments within the same state or region can develop peer-to-peer learning networks that facilitate shared progress. This type of exchange can also expand the power of local governments by enabling them to advocate for issues and create progress with a united voice. The Urban Sustainability Directors Network facilitates regional networks for cities, and several Regional Energy Efficiency Organizations are acting as catalysts to form city/state networks within their geographic areas.

Resources and Example Programs

- Urban Sustainability Directors Network Regional Networks
- South-central Partnership for Energy Efficiency as a Resource (SPEER) City Efficiency Leadership Council
- Bay Area Regional Energy Network (BayREN) and Southern California Regional Energy Network (SoCalREN)
- ICLEI, Local Government Coalition, and Institute for Local Government Statewide Energy Efficiency Collaborative

C. Establish State-Led Leadership Programs for Local Governments S

Leadership at the state level can improve energy efficiency collaboration among city, county, and state governments. States can establish clean energy or energy-efficiency leadership and recognition programs for their cities and counties, setting minimum criteria for participation and helping promote progress at the local level. The Massachusetts Green Communities program can serve as a national model.

Resources and Example Programs

- New York Five Cities Energy Plan
- Massachusetts Green Communities

D. Facilitate Greater Energy Efficiency Partnership and Planning with Utilities S Co Ci

Ratepayer-funded energy efficiency programs, including utility incentives and rebates, often exist separately from energy efficiency efforts by states, counties, and cities. This fragmentation drives up the cost of individual programs and fails to capitalize on opportunities for shared progress. Governments can work with their utilities and state regulators to undertake joint planning on energy efficiency policies and programming, supporting a fully integrated energy efficiency platform that benefits ratepayers, governments, and utilities. For instance, a statewide commercial PACE program and a utility energy efficiency rebate for commercial customers are targeting the same audience, and could combine market intelligence and marketing efforts to reduce programs costs and reach more customers. A citywide energy benchmarking program that is educating property owners can also

provide leads for programs to target financial incentives. In some cases, benchmarking requirements may even include exemptions for property owners who enroll in utility energy efficiency programs, such as the City of Austin has piloted.

Resources and Example Programs

- SEE Action ECB WG fact sheet: *Strategic Energy Management for State and Local Governments*
- City of Minneapolis, Xcel Energy, and CenterPoint Energy Clean Energy Partnership
- City of New York Retrofit Accelerator
- City of Austin Energy Conservation Audit and Disclosure Ordinance
- City of Portland, OR Resources for Improving Building Energy Performance
- District of Columbia Sustainable Energy Utility (DCSEU)
- City of San Francisco Energy Watch program
- Building Performance with ENERGY STAR program

Improve Access to Capital for Energy Efficiency Improvements

The initial costs of energy efficiency improvements can prevent projects from taking place, or limit the scope of comprehensive energy efficiency projects designed to deliver significant energy savings. Government leaders can help address financial barriers to energy efficiency by taking the following actions:

A. Map All Energy Efficiency Financial Solutions Available within a State and Assess Options S Co Ci

Given significant interest by policymakers in reducing financial barriers to energy efficiency, there is often a variety of initiatives to expand access to capital within a state, administered at the state, county, or local levels. Before developing new initiatives, state leaders should understand the needs of its communities and map the financial mechanisms available to reduce the upfront costs of energy efficiency. These may include utility incentives and rebates, utility on-bill financing or repayment programs, energy savings performance contracts, "green" banks, revolving loan funds, unsecured loans, credit enhancements, tax credits, PACE programs, and others. There is no single answer for the most appropriate way for a state, city, or county to expand access to capital for energy efficiency improvements. PACE may work well for one state or county, while another government works with its utility on an innovative on-bill repayment program. Governments should work with local experts in the energy efficiency and financial space to clearly define target customers and financing gaps when determining the best options given local opportunities, limitations, existing financial programs, and customer needs. In some cases, it may be more effective for governments to help expand consumer participation in existing offerings than to develop new ones.

Resources and Example Programs

- Database of State Incentives for Renewables and Efficiency
- DOE resources on financing solutions for State, Local, and Tribal Governments
- DOE resources on qualified energy conservation bonds (QECBs)
- DOE Better Buildings Alliance Market Solutions Team on Financing
- EPA financial value calculators
- SEE Action energy efficiency financing resources
- Institute for Market Transformation report: Commercial Finance Policy
- City of Los Angeles Better Buildings Challenge *SoCal Edge*

- State of Texas LoanSTAR revolving loan program
- PACENation resources on property assessed clean energy programs

B. Promote Energy-Aligned Leasing in Multi-Tenant Buildings S Co Ci

Governments should promote basic changes to lease contracts between tenants and landlords that distribute the costs and benefits of energy efficiency equitably between the parties, reducing split-incentives where one party bears the cost of efficiency while the other enjoys the benefits. Existing resources include model energy-aligned leases.

Resources and Example Programs

- City of New York City Energy Aligned Clause
- DOE Green Lease Library and Green Lease Leaders Program
- EPA Successes in Sustainability: Landlords and Tenants Team Up to Improve Energy Efficiency
- Academic report: Policy options for the split incentive: Increasing energy efficiency for low-income renters

Improve the Energy Efficiency of Publicly Owned Facilities

Governments cannot be leaders without leading by example, and best practices are rapidly emerging to improve the energy efficiency of city, state, and county-owned facilities. Government leaders can promote their own energy efficiency leadership by taking the following actions:

A. Communicate Short-Term and Long-Term Goals Related to Public Building Energy Efficiency S Co Ci

Policymakers must demonstrate commitment to improving the energy efficiency of their own facilities by communicating short-term and long-term goals and planned actions to the public, and by allocating an appropriate budget.

Resources and Example Programs

- City of Cambridge, MA Climate Protection Plan
- Massachusetts Metropolitan Area Planning Council Guidance on Creating Local Energy Plans:
- California Jurisdictions Addressing Climate Change
- ACEEE Local Energy Efficiency Policy Calculator
- DOE Guide to Community Energy Strategic Planning
- EPA Energy and Environment Guide to Action: State Policies and Best Practices for Advancing Energy Efficiency, Renewable Energy, and Combined Heat and Power

B. Conduct Energy Benchmarking on All Public Facilities and Make Information Publicly Available S Co Ci

Conducting energy benchmarking on public buildings and publicly disclosing the results increases government transparency and accountability, especially for underperforming facilities. It will also help government facilities personnel evaluate opportunities to improve energy efficiency.

Resources and Example Programs

- City of New York 2010-2013 Energy Data Disclosure for Public Buildings in NYC
- City of Minneapolis Energy Benchmarking Results for Public Buildings

- State of Minnesota Public Building Benchmarking Results
- State of Iowa Public Building Benchmarking Results

C. Explore Energy Services Performance Contracting S Co Ci

Many state and local governments are executing energy services performance contracts to improve the energy efficiency of public facilities over the long term. Governments that are not currently involved in energy services performance contracting should ensure that existing regulatory frameworks allow the use of such mechanisms.

Resources and Example Programs

- DOE Better Buildings Energy Savings Performance Contracting Accelerator program
- EPA ENERGY STAR Introduction to Performance Contracting
- DOE resources on energy savings performance contracting (includes state/local success stories):
- DOE model documents for an energy savings performance contract
- State of Virginia Guidance and Resources for Energy Performance Contracting
- State of Oregon Guidance and Resources for Energy Performance Contracting

D. Require Public Facilities Managers to Hold Strong Energy Efficiency Credentials S Co Ci

Many energy efficiency opportunities in buildings are related to ongoing operation and maintenance. States, cities, and counties should put in place requirements for all public facilities managers to hold credentials that prove their competency in maximizing facility energy performance.

Resources and Example Programs

- DOE Better Buildings Workforce Development Initiative
- DOE Better Buildings Workforce Development Guidelines

Adopt and Implement Strong Building Energy Codes

Building energy codes define the modern rules for the energy efficiency of buildings, setting baseline requirements during construction and renovation. Government leaders can promote the adoption and implementation of building energy codes by taking the following actions:

A. Adopt the Most Recent Version of the Model Commercial Building Energy Conservation Code S

The most widely referenced commercial building energy code in the United States – the International Energy Conversation Code – is updated continuously every three years. States should adopt the most recent version of this model code and support processes to ensure that subsequent versions of the code can be considered in a timely manner. Model energy codes that have stronger energy efficiency requirements, including the International Green Construction Code, are also available. States should also consider creating "stretch codes" that have stronger energy efficiency requirements as options for their jurisdictions.

Resources and Example Programs

- Building Codes Assistance Project
- International Code Council International Energy Conservation Code (IECC)
- International Code Council International Green Construction Code (IgCC)
- Commonwealth of Massachusetts Stretch Energy Code

B. Support Energy Code Implementation and Enforcement Ci Co

While states adopt energy codes, the implementation and enforcement of codes (as well as training for code inspectors) is overseen by local governments. City and county governments should review energy codes to understand their application related to renovation, ensuring that major building improvement projects are subject to energy code requirements. Local governments should also ensure that code inspectors have sufficient training to enforce energy codes, especially as newer codes are adopted.

Resources and Example Programs

- City of New York Local Law 85
- Institute for Market Transformation code compliance resources
- BayREN Permit Resource Opportunity Report

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