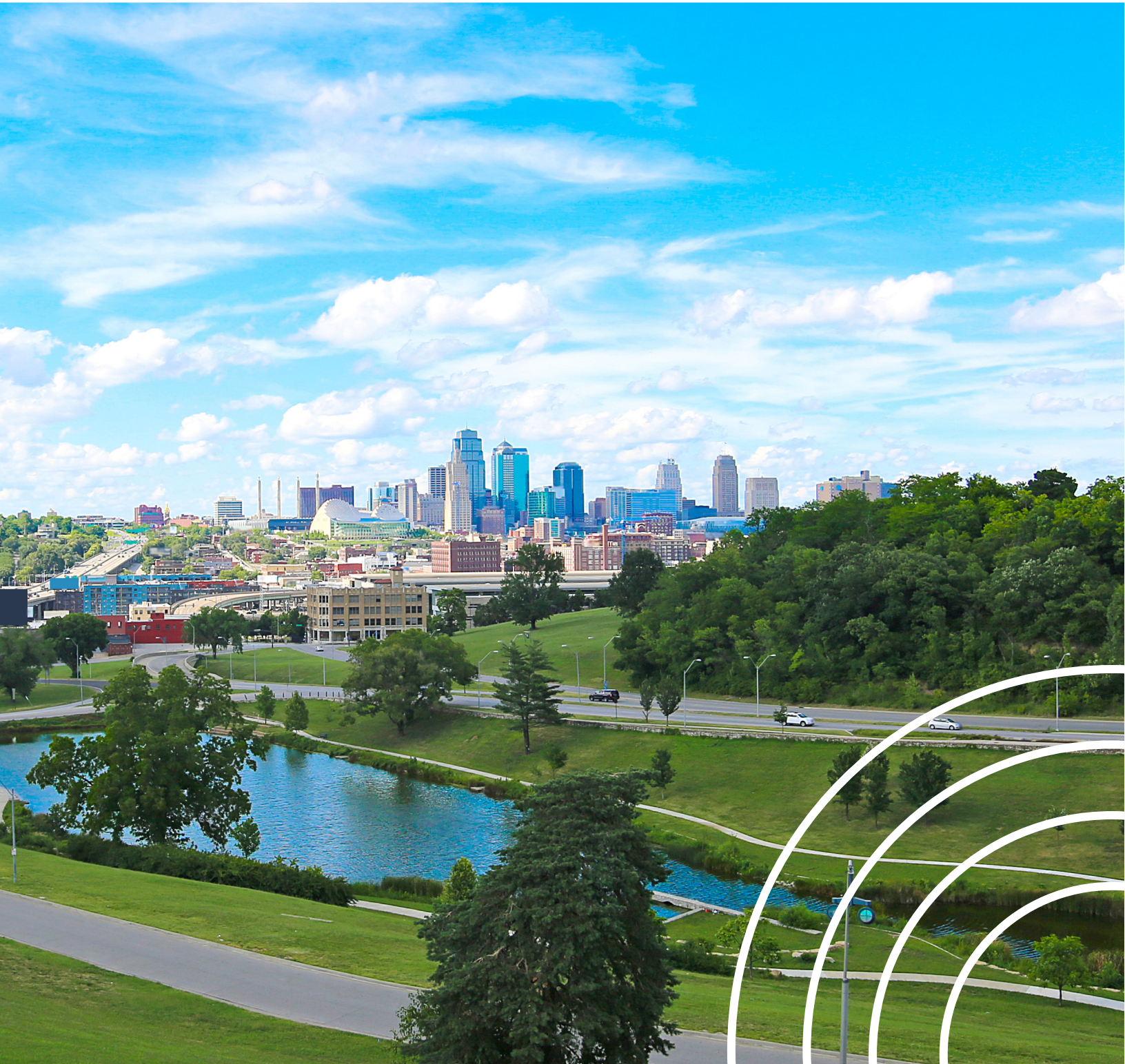
CITY ENERGY

A JOINT PROJECT of **NRDC + IMT**

DECEMBER 2018

PRIVATE SECTOR CHALLENGES



ABOUT CITY ENERGY PROJECT AND THE CITY ENERGY PROJECT RESOURCE LIBRARY

A joint initiative of the Institute for Market Transformation and the Natural Resources Defense Council, the City Energy Project supported bold yet practical ways to deploy energy efficiency at the city level to boost local economies, reduce pollution, and create healthier, more prosperous communities nationwide.

The project partnered with 20 local governments across the U.S. from 2013–2018 to design locally appropriate energy efficiency policies and programs. Building upon the past successes and innovation of cities, the City Energy Project established best-in-class practices for energy efficiency to be customized and replicated nationwide. Models and recommendations have been distilled into the City Energy Project Resource Library. This curated set of resources contains the necessary blueprints for a city government to craft and implement customized solutions to productively manage energy efficiency initiatives across commercial, multifamily, and public buildings in its jurisdiction.

For more information on the participating cities and counties in the City Energy Project, and to search the City Energy Project Resource Library, visit cityenergyproject.org.

The City Energy Project was generously supported by Bloomberg Philanthropies, Doris Duke Charitable Foundation, and The Kresge Foundation.

CITY ENERGY

A JOINT PROJECT of **NRDC + IMT**

PHILADELPHIA

TABLE OF CONTENTS

INTRODUCTION

An energy efficiency challenge program is a city-led voluntary initiative that asks representatives of private sector buildings to make a public commitment, often to the mayor, to reduce energy waste within a defined timeframe. This commitment should be ambitious but achievable, requiring participating buildings to push their sustainability efforts farther and faster and cooperate with their peers by sharing stories of their successes and difficulties.

ENERGY EFFICIENCY CHALLENGE PROGRAMS

Challenge programs allow cities to make leading real estate companies aware that energy efficiency is an important city priority and recognize those firms that take significant action to reduce their buildings' consumption of energy. In successful programs, this results in significant energy savings and greenhouse gas reductions. Challenges also give city government the opportunity to engage with building owners on energy efficiency topics in a direct and personal way. This engagement can help city government staff to learn more about how the local real estate industry views energy efficiency and where additional support and resources are needed to encourage wide-scale adoption of energy efficiency in local buildings.

THE STRATEGIC VALUE OF CHALLENGE PROGRAMS

The impact of an effective challenge program is more than getting buildings to save energy, though this is a major benefit. Done right, a challenge program can be the start of a robust energy efficiency platform, set the stage for energy policy, and highlight the city's commitment to a cleaner, healthier environment. Other benefits offered to cities include:

- **NETWORK BUILDING**
  A challenge program becomes a natural channel for distributing energy efficiency resources more easily. The city and its partners can use this network to introduce and recruit for other efficiency programs and incentives and learn more about how real estate decision-makers view energy efficiency.

- **CAPACITY BUILDING**
  The people managing the day-to-day operations of buildings participating in the challenge may not have the skills, expertise, resources, or authority to reduce their buildings' energy waste. Challenge programs present an opportunity to help property managers and facilities staff overcome these difficulties through peer learning events, demonstrations of efficient technology and operational procedures, and guidance on communicating the value of efficiency projects to upper management.

- **BRAND BUILDING**
  Well-run and well-publicized challenge programs can be leveraged to encourage real estate firms and the public to associate the city's energy and sustainability efforts with corporate responsibility, good business practice, and civic leadership.

- **BUILDING SUPPORT FOR EFFICIENCY INITIATIVES**
  A well-designed challenge program provides a direct communications link to many of the largest and most important real estate owners in the community. Cities can use this connection to inform the development of comprehensive, industry-supported approaches to improving building energy efficiency.

The remainder of this guide will describe the basic elements of planning and running a challenge program while using examples from city government-led challenge programs.

DES MOINES

ESTABLISH PROGRAM PARAMETERS

CHALLENGE COMMITMENT

Successful programs challenge participants to reduce their energy use by at least 20 percent over a five to 10-year period. Longer programs with ambitious reduction targets give participants more time to learn about efficiency, implement energy-reducing projects, and reinforce the idea that energy efficiency is an intrinsic part of good real estate management.

Cities may choose to use a greenhouse gas (GHG) reduction target as the basis of their challenge program. In such cases, cities need to account for the effects that an increasing supply of renewables will have on the greenhouse gas emissions of participating buildings. To avoid crediting participants for GHG reductions coming from a less carbon-intensive energy grid, cities should calculate participants' GHG emissions using CO_2e coefficients for all fuels from a year preceding the competition. These coefficients should remain constant throughout the challenge program's duration, so that participants only receive credit for GHG reductions resulting from their own efforts to improve their properties' energy efficiency.

CITY EXAMPLES

Chicago
The City of Chicago was ambitious with its challenge program, asking participating buildings to reduce energy use by 20 percent over five years.

Atlanta and Los Angeles
The cities of Atlanta and Los Angeles have had success asking participants to reduce their energy consumption by 20 percent over 10 years.

New York City
Participants in the New York City Carbon Challenge commit to reducing their greenhouse gas emissions by 30 percent or more over 10 years.

EXPECTATIONS FOR PARTICIPANTS

Besides asking participants to achieve a specific energy or GHG reduction, cities should outline additional expectations they have for participants. These expectations should encourage active participation in the challenge program and its associated activities. CEP recommends that cities ask their participants to commit to the following:

- A public commitment to the program's goals from an executive-level representative
- Annual measurement and reporting of their building's energy use through ENERGY STAR Portfolio Manager
- Creation of an energy reduction action plan with annual updates reflecting progress and amendments to the plan. (Examples of action plan templates that New York City provides its challenge participants are available here.)
- Implementation of energy conservation strategies identified in the action plan
- Participation in regular educational and networking sessions and in one-on-one meetings with the city
- Attendance at the annual awards ceremony
- Sharing of success stories and lessons learned with other program participants

DATA COLLECTION AND MANAGEMENT

Cities running challenge programs should require participants to benchmark their buildings in ENERGY STAR Portfolio Manager and submit data to the city annually. This allows the city to track participants' progress toward the challenge goal, identify high-performing participants, and verify the data of potential award winners.

It is recommended that cities collect the following data from participants:

- Site and source energy use intensity
- Weather-normalized site and source energy use intensity
- ENERGY STAR score, if available
- Total annual greenhouse gas emissions
- Monthly energy use by fuel type

And, if reduction of water use is part of the challenge's goal:

- Indoor water use and water use intensity
- Outdoor water use (where available)
- Total water use

SELECTING A BASELINE

In addition to defining the data that participants must track and report, the city needs to establish a baseline year from which it will measure participants' progress toward the challenge goal. The baseline year will generally be the year preceding the challenge's launch. Cities should consider accepting an earlier baseline year to credit buildings for recent efforts to become more efficient.

VERIFYING DATA

Cities should consider to what extent they will verify the data they collect from challenge participants. Errors due to inexperience, manual data entry, and misinterpretation of utility bills are all likely to show up in participants' data reports. Some common data fields to consider reviewing include gross floor area, baseline and final energy use and energy use intensity, greenhouse gas emissions, and energy costs. Depending on available resources, the city may choose to verify only competition winners or a random sample of participants.

CHALLENGE PROGRAM RECRUITING

The success of a challenge program depends largely on the number of participating properties it can enroll. Without a significant number of participating properties, challenge programs may not generate enough benefits— in terms of energy savings, relationship-building, or capacity development — to justify their cost. For this reason, cities launching challenge programs should carefully think through their approach to recruiting program participants. The following strategies have helped City Energy Project cities increase the number of enrollees in their programs.

MAYORAL PARTICIPATION

Cities should use the mayor's prominence to harness the civic pride of local stakeholders. Most local businesses and institutions are proud of their city and want to be seen as civic leaders, so framing the program as a mayor's challenge can help draw them in. Former Mayor of Atlanta Kasim Reed was actively involved in Atlanta's Better Buildings Challenge, participating in recruitment activities and Challenge meetings, as well as presiding over the annual awards ceremony, personally handing out awards. The program's implementers credited the mayor's public and vocal backing of the program with making it easier to get in front of executive-level personnel in the city's large real estate firms.

TARGETED RECRUITING

Local real estate stakeholders that represent multiple holdings, such as property managers, professional associations, housing authorities, and major property owners are all good targets for initial recruiting, as a commitment from one of these could mean the enrollment of numerous buildings in the program. To maximize the effectiveness of recruiting, cities should identify the real estate sectors they want to target for participation in the challenge.

The following sectors are generally the most promising for participation in a challenge program:

- **Municipal buildings**. The city should show that it leads by example by enrolling appropriate buildings from its municipal portfolio into the challenge.
- **Institutional buildings**. Art museums, local university buildings, and hospital campuses are all good candidates for inclusion in a challenge program as they raise the profile of the program and often can achieve significant energy savings.
- **Buildings owned by high-profile companies**. Cities should approach local major employers to join their challenges as their participation raises the program's public profile. While many large companies have corporate sustainability plans and may accomplish the goals of the challenge whether or not they join, their participation improves the program's visibility and prestige.
- **Class A office buildings**. In general, large, Class A offices are the best target for challenge programs among commercial buildings. These buildings typically have the internal funding and staff resources available to devote to meeting the challenge goal and often have their own corporate sustainability goals. City Energy Project cities reported more difficulty enrolling Class B and C properties and small and medium-sized buildings in their challenges and less retrofit activity among them.

Once the city has enrolled a critical mass of participants from these sectors, it should consider recruiting buildings from other sectors such as class B and C commercial spaces and multifamily properties.

LEARN MORE

Leading the Way Guide

The City Energy Project resource, **LEADING THE WAY** is designed to help a city implement an energy efficiency strategy focused on public buildings.

VIEW GUIDE >

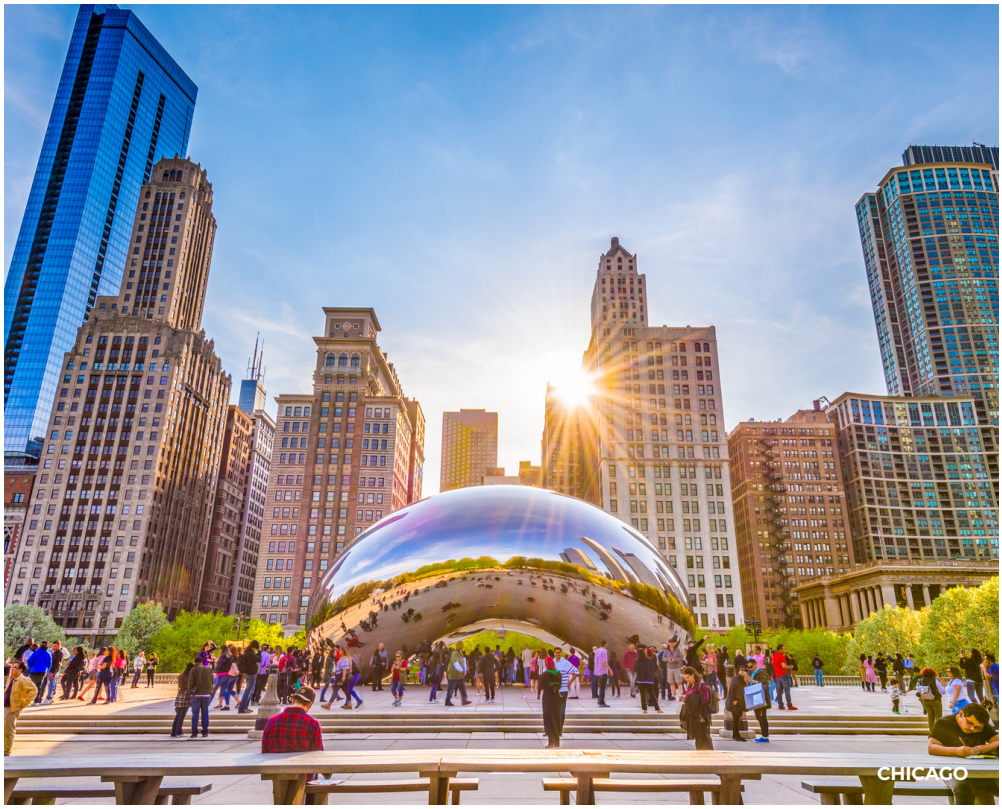
SCALING RECRUITMENT

In addition to their own recruitment efforts, cities should seek out partners that can help spread the word about the challenge program to their networks. By framing the program as a city offering support to building owners to reduce their operating costs, the city may be able to enlist partners such as the Building Owners and Managers Association to help with recruitment by promoting the challenge to their membership.

Cities should also consider ways to work with business associations and business improvement districts to promote participation in their challenge programs. The City of Atlanta formed partnerships with three business improvement districts: Central Atlanta Progress, Midtown Alliance, and Livable Buckhead. These organizations helped the challenge sign up nearly 600 participating buildings covering over 111 million square feet.

PROGRAM MANAGEMENT

For the best chance of success, a challenge program needs a full-time administrator responsible for overseeing its day-to-day operations. Cities that cannot fund a full-time position using public money should attempt to secure funding for a program administrator or secure commitments from a local partner willing to lead the effort. Funding sources could be local philanthropies, utility programs, or state or federal funds. Challenge programs structured as partnerships between municipal governments and private and nonprofit sector partners have delivered better results than those run by municipal governments alone. That said, finding funding to support one or more full-time staff people may not be possible for all cities. In such cases, cities could look to Retrofit Chicago as an example of a successful challenge program that is internally managed on a part-time basis



PARTICIPANT ENGAGEMENT

RECOGNITION

A top reason that building owners enroll their properties in challenge programs is to receive recognition for their leadership in environmentally responsible real estate management and for their participation in an important civic initiative. Cities hosting challenge programs should strive to give their participants ample publicity for making progress toward the challenge's goals.

Cities should recognize participation by sending new enrollees a welcome packet including a letter of thanks signed by the mayor, a banner that participants can display in their buildings' lobbies, and the option to have their logos on the challenge website.

All challenge programs should host an annual awards ceremony to recognize top performers, publicize the program, and inspire participants to go further with their energy conservation efforts. For the most impact, schedule the mayor to appear at the ceremony to thank participants for their efforts and to hand out top awards personally.

In addition to a high-profile awards ceremony, program administrators should publish case studies describing how top-performing participants reduced their energy consumption. These success stories recognize the achievements of participants and are useful for convincing other building owners to join the challenge.

KEY ENGAGEMENT ACTIVITIES

- ✔ Provide a welcome packet including letter of thanks from the mayor
- ✔ Convene meetings with challenge participants
- ✔ Host an annual awards ceremony
- ✔ Secure the mayor's participation in the awards ceremony
- ✔ Publish case studies on achievements by participants

GROUP AND INDIVIDUAL MEETINGS

Ongoing engagement is critical to maintaining momentum and accountability. Challenge program administrators must meet individually with each challenge participant on an annual basis to review progress. These meetings give the administrator the opportunity to identify participants that may need additional assistance or that merit special recognition.

All challenge programs should schedule a quarterly meeting for all participants to review progress, identify shared challenges and opportunities, and provide opportunities for peer learning and technical assistance. The city can bring in presenters to share information with the challenge members, adding value to program participation.

TECHNICAL SUPPORT AND EDUCATION

Where resources allow it, challenge programs should offer their participants assistance in overcoming barriers to energy efficiency and reaching the challenge goals. CEP recommends that the city-led challenge programs consider helping participants with the following:

- **BENCHMARKING AND ENERGY AUDITS**
  Participants may need assistance in benchmarking their buildings and finding savings opportunities through an energy audit. The Atlanta Better Buildings Challenge, the Los Angeles Better Buildings Challenge, and Retrofit Chicago help their participants access free energy audits provided by local utility programs.
- **DEVELOPING ENERGY EFFICIENCY PROJECTS**
  Challenge programs can assist participants in developing energy efficiency projects in navigating applicable government and utility-sponsored initiatives. As an example, Retrofit Chicago used external grant funding to support "energy road maps" for 19 participating properties. These documents helped participants understand the results of their energy audits, and how incentives from the local utility, ComEd, could apply to their options for improvement.
- **RESOLVING THE SPLIT INCENTIVE**
  One of the most common and cumbersome barriers to energy efficiency, the split incentive, occurs when building owners have no financial incentive to upgrade their buildings' energy performance because the savings would accrue primarily to their tenants. High-performance leases, also known as green leases, contain clauses that align owner and tenant incentives to encourage collaboration on energy efficiency improvement and can ameliorate this problem. The Green Lease Library contains examples of green lease language that helps building owners and tenants fairly allocate the costs and benefits of energy efficiency so that all parties are incentivized to reduce their energy consumption. Cities could consider hosting workshops or private consultations to learn about how green leases can help them meet the goals of the challenge program.

LEARN MORE

Creating and Running a Building Performance Help Center

The City Energy Project resource, **CREATING AND RUNNING A BUILDING PERFORMANCE HELP CENTER** is designed to help a city assess the benefits of starting and managing a varierty of help center services to help private building owners.

VIEW GUIDE >

EMPOWERING OPERATIONAL STAFF

Most buildings could capture significant energy savings simply by implementing low- and no-cost operational measures; however, capacity constraints and a lack of expertise among buildings' facilities and operations staff often prevent buildings from seizing this opportunity. Retrofit Chicago's Engineering Roundtable is a good example of a successful peer-learning forum in which building engineers and facilities managers can learn from each other and from technical experts about best practices in energy management and new technologies that might help them achieve operational energy savings.

DOCUMENT PROGRESS

Cities should periodically evaluate how their voluntary challenge programs are helping meet the goals of the citywide energy or climate action plan. Depending on the timeline of the program, the program administrator should produce semi-annual or annual progress reports that discuss how the implementation of energy conservation strategies is benefiting the city, present qualitative and quantitative savings data, and showcase key projects.


BOSTON

APPENDIX: EXAMPLE CHALLENGE PROGRAMS

NATIONAL CHALLENGE PROGRAMS

	**Architecture 2030 Challenge**	Under Architecture 2030's 2030 Challenge, the architecture and building community commits that all new buildings, developments, and major renovations shall be designed to meet a fossil fuel, greenhouse gas (GHG) emissions, or energy consumption performance target of 60 percent below the regional (or national) average/median for that building type.
	**ICLEI Green Business Challenge U.S.**	ICLEI—Local Governments for Sustainability—offers everything a local government needs to launch and customize a Green Business Challenge. The Business Challenge app, a web-based platform that tracks competition among businesses. Through the app, participants can register, take a baseline survey, browse a library of tips and resources, update their achievements, and view a scorecard that tracks their progress. ICLEI's guidebook and toolkit explain the detailed steps to launch a program, and share the resources and lessons learned from other cities and counties that worked with ICLEI on their programs.
	**Better Buildings Challenge**	The Better Buildings Challenge is a voluntary leadership initiative that asks CEOs and executives of U.S. companies, universities, schools, multifamily residential organizations, and state and local governments to make public commitments to reduce energy consumption by 20 percent or more over 10 years. It recognizes leaders that have committed to upgrading buildings and plants across their portfolio and providing their energy savings data and strategies as models for others to follow. Many CEP cities, such as Atlanta and Los Angeles, are participants in the Better Buildings Challenge.
	**EPA Battle of the Buildings**	The U.S. Environmental Protection Agency's national building competition, the battle annually recognizes annually the building that is the "Biggest Energy Loser."

LOCAL CHALLENGE PROGRAMS

Atlanta Better Buildings Challenge

The Atlanta Better Buildings Challenge asks its participants to reduce their energy and water consumption by 20 percent by the year 2020. Since 2011 the program has enrolled over 600 buildings covering 114 million square feet and realized portfolio-wide energy and water savings of 17 percent and 14 percent, respectively. The program also produced an implementation model containing guidance and sample documents to help other cities replicate their success.

Downtown NOLA Energy Challenge

The Downtown NOLA Energy Challenge invites buildings of all types—a large or small commercial structure, a hotel, a retail establishment, a condo or apartment development—to participate in tracking and reducing energy use. For each sector, buildings that save the most energy are recognized by the city. The challenge provides building owners with energy consumption information that is analyzed for patterns and anomalies. From that analysis, recommendations are made on high-impact energy upgrades. The program also includes access to incentives, trainings, and other assistance.

Energize Des Moines

Energize Des Moines targets energy and water reductions in buildings greater than 25,000 square feet. As part of the challenge, the City hosts monthly or bimonthly sector networking and education events featuring presentations on best practices, success stories, emerging technologies, energy efficiency financing, and policy. With continuing sponsorship, Energize Des Moines intends to extend the challenge through 2020, documenting the multiple benefits of energy saved, money saved, GHG emissions reduced/prevented, and jobs stimulated. Energize Des Moines challenges building owners and managers to benchmark energy use, and then to take action to reduce energy use, whether through energy and water assessments, audits, retrocommissioning, HVAC upgrades, or other improvements.

Energize Saint Paul Race to Reduce: A 90 Day Challenge

Energize Saint Paul's Race to Reduce challenge ran from June to August 2018 and was open to all properties 50,000 square feet or larger. Its goal was to get property owners associated with 100 of St. Paul's largest commercial and multifamily buildings to commit to reducing their energy usage over the summer. Themed workshops, tip sheets, and networking events each month focused on energy benchmarking, tuning up air conditioning and other appliances, and updating automatic heating, cooling, and lighting schedules to make sure they're working efficiently.

LOCAL CHALLENGE PROGRAMS (CONTINUED)

New York City Carbon Challenge

New York City set an ambitious goal to reduce citywide GHG emissions 80 percent below 2005 levels by the year 2050. Seventeen leading universities, the 11 largest hospital organizations, 12 global companies, and 20 residential management firms have accepted the Carbon Challenge, pledging to reduce building-based emissions by 30 percent or more in 10 years.

ReEnergize Reno

ReEnergize Reno is an ambitious program to improve the efficiency of commercial, industrial, and multifamily buildings 20 percent by 2025.

RePowerPVD

Providence, R.I. launched a two-pronged challenge program called RePowerPVD. The challenge encourages participating buildings to reduce their energy consumption by 20 percent by 2025 through the Better Buildings Challenge, with a separate track for buildings to "race" to be the first net-zero energy building in Providence.

Retrofit Chicago

Retrofit Chicago targets three buildings sectors: commercial, residential, and municipal. The commercial sector challenge, called the Commercial Buildings Initiative, challenges Chicago's large commercial buildings to reduce their energy consumption by 20 percent within five years. As of December 2018, it included 50 buildings encompassing 40 million square feet of space.

ABOUT THE INSTITUTE FOR MARKET TRANSFORMATION AND THE NATURAL RESOURCES DEFENSE COUNCIL

ABOUT THE INSTITUTE FOR MARKET TRANSFORMATION

The Institute for Market Transformation (IMT) is a national 501(c)(3) nonprofit organization that catalyzes widespread and sustained demand for energy-efficient buildings. Founded in 1996 and based in Washington, D.C., IMT specializes in driving the intersection of real estate and public policy to make buildings more productive, affordable, valuable, and resilient. A trusted, non-partisan leader, IMT focuses on innovative and pragmatic solutions that fuel greater investment in energy-efficient buildings to meet local market priorities. IMT offers hands-on technical assistance and market research, alongside expertise in policy and program development and deployment and promotion of best practices and knowledge exchange. Its efforts lead to important policy outcomes, widespread changes in real estate practices, and lasting market demand for energy efficiency—resulting in greater benefits for all people, the economy, and the environment. Visit us at www.imt.org and follow us on Twitter @IMT_speaks.

IMT
INSTITUTE
FOR MARKET
TRANSFORMATION

ABOUT THE NATURAL RESOURCES DEFENSE COUNCIL

The Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment. NRDC has offices in New York City, Washington, D.C., Los Angeles, San Francisco, Chicago, Bozeman, MT, and Beijing. Visit us at www.nrdc.org and follow us on Twitter @NRDC.

NRDC
NATURAL RESOURCES
DEFENSE COUNCIL

CITY ENERGY
A JOINT PROJECT of **NRDC + IMT**

LOOKING FOR MORE?

Visit the City Energy Project Resource Library