

# Commercial Building Benchmarking Programs in the Southwest



By Lauren Smith  
September 2015



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Cover photo courtesy of Denver Visitors and Convention Center.

## ABOUT SWEEP

The Southwest Energy Efficiency Project is a public interest organization dedicated to advancing energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. For more information, visit [www.swenergy.org](http://www.swenergy.org).

SWEEP's Buildings Efficiency Program promotes energy efficiency in new and existing buildings through work with residential, commercial, and multifamily stakeholders. Focus areas include energy code adoption and compliance, net zero energy, utility programs, and energy benchmarking.

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## INTRODUCTION: BENCHMARKING AND TRANSPARENCY

Increasingly, state and local governments are implementing benchmarking programs to measure and reduce energy use in buildings. Benchmarking is the process of tracking building energy use over time and comparing it to baseline energy use or energy use of other, similar buildings. In a broader sense, benchmarking is a “market-based policy tool to increase building energy performance awareness among key stakeholders and create demand for energy efficiency improvements.”<sup>1</sup> For the purposes of this report, benchmarking is discussed in the context of commercial, multifamily and industrial buildings.

This report points to successful benchmarking programs in the U.S. and their benefits. In large part, it is meant to provide a current and detailed review of benchmarking programs in each of the Southwest states in which SWEEP works to advance energy efficiency: Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming.

Benchmarking programs can be mandatory or voluntary, and may apply to publicly-owned and/or privately-owned buildings. With mandatory benchmarking programs, state and local governments adopt policies requiring energy measurement and reporting. Voluntary programs are often incentive-based and encourage building owners to participate in the benchmarking program for awards or recognition. Voluntary programs are administered by state and local governments or other groups such as eco-districts and membership associations for public and/or private buildings.

Many benchmarking programs include transparency requirements where energy data is disclosed to the public or to government agencies. As Northeast Energy Efficiency Partnerships (NEEP) discusses in *Building Energy Rating and Disclosure Policies: Update and Lessons from the Field*, disclosure of energy use information can be classified as either “triggered” or “scheduled.”<sup>2</sup> Triggered disclosure is required at major transaction points (i.e., at the time of rental or sale). In this scenario, building owners disclose energy consumption information to potential buyers, renters, and lenders. Scheduled disclosure typically occurs annually, as building owners are required to disclose annual energy data by a set date. Scheduled disclosure enables owners and operators to institute continuous improvement practices, benchmark against other buildings, and

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<sup>1</sup> <http://energy.gov/eere/slsc/state-and-local-energy-benchmarking-and-disclosure-policy>

<sup>2</sup> NEEP. *Building Energy Rating and Disclosure Policies: Update and Lessons from the Field*. 2013.

establish performance targets.<sup>3</sup> In the case of scheduled disclosure, building owners may be required to disclose energy use information to various parties such as city or county governments and the general public. In most programs, benchmarking is performed using the U.S. Environmental Protection Agency's (EPA) free online tool, *ENERGY STAR Portfolio Manager*.

In addition, some benchmarking policies (such as that in New York City) require energy efficiency assessments or upgrades such as energy audits, retro-commissioning, and lighting retrofits. Other benchmarking policies (e.g., Austin, TX) may require buildings that achieve low energy rating scores to meet energy reduction targets, and some (e.g., Seattle, WA) do not require any additional actions beyond benchmarking.

### Benefits of Benchmarking Programs

When implemented effectively, benchmarking and disclosure programs can result in the following benefits:

- energy savings and lower operating costs
- greenhouse gas reductions
- increased demand for energy efficiency services<sup>4</sup>
- higher valuation of energy efficient buildings
- increased transparency and consumer awareness
- development of targeted utility or incentive programs
- non-energy benefits such as comfort for building occupants<sup>5</sup>
- data for energy efficiency analyses conducted by states, cities, and other entities

Benchmarking programs have the potential to improve the economy and create jobs while at the same time reducing overall energy use and operation costs. In a 2012 study conducted by the Institute for Market Transformation (IMT) and the Political Economy Research Institute (PERI), an advisory panel analyzed the potential for a national building energy rating and disclosure policy to create jobs and reduce energy costs in commercial and multifamily residential buildings. The analysis (see Figure 1 below) predicted that a national policy would:

- create more than 59,000 jobs in 2020;
- reduce energy costs for building owners, consumers and businesses by more than \$18 billion through 2020;
- generate more than \$7.8 billion in private investment in energy efficiency measures through 2020; and
- reduce annual energy consumption in the building sector by approximately 200 trillion BTUs by 2020, which is equivalent to taking more than 3 million cars off the road each year.<sup>6</sup>

<sup>3</sup> Ibid.

<sup>4</sup> Energy efficiency services include energy audits, retro-commissioning, green building, capital projects, etc.

<sup>5</sup> Non-energy benefits include improved comfort, indoor air quality, tenant retention, and occupant productivity.

<sup>6</sup> IMT and PERI. *Analysis of Job Creation and Energy Cost Savings from Building Energy Rating and Disclosure Policy*. 2012.

Figure 1 | Analysis of Job Creation and Energy Cost Savings from Building Energy Rating and Disclosure Policy



Graphic courtesy of Energy Efficient Buildings Hub, 2013

Local analyses have yielded similar estimates in urban areas across the country. In a recent report on New York City's benchmarking and transparency policy, Local Law 84, an evaluation team found a cumulative energy savings of 5.7% and total energy cost savings of about \$267.5 million during the first four years of the policy (2010-2013).<sup>7</sup> In its 2011-2012 Energy Performance Report, the Seattle Office of Sustainability and Environment estimated that \$55 million in energy costs could be saved each year if all buildings in the city with high energy use improved to become average energy users, and that \$90 million could be saved each year if all buildings with high energy use improved to become low energy users.<sup>8</sup> The City of Minneapolis' second annual report on energy use, completed in 2015, estimates that the city's public and commercial buildings (which meet certain size requirements) have the potential to save \$11 million on energy costs per year and avoid more than 62,000 metric tons of greenhouse gas emissions by increasing their energy efficiency and reducing consumption by 10%.<sup>9</sup>

### Current Landscape of Mandatory Benchmarking Policies

Currently, two states, 14 cities, and one county have adopted benchmarking requirements for private-sector commercial buildings. These include Washington, DC; Austin, TX; New York, NY; Seattle, WA; San Francisco, CA; Philadelphia, PA; Boston, MA; Minneapolis, MN; Chicago, IL; Cambridge, MA; Berkeley, CA; Atlanta, GA; Portland, OR; Kansas City, MO; Montgomery County, MD; and the states of California and Washington.<sup>10</sup> These policies include various provisions for applicability and enforcement. This list does not include state and local governments that have implemented benchmarking policies for public buildings only nor does it include voluntary programs.

<sup>7</sup><http://energy.gov/sites/prod/files/2015/05/f22/DOE%20New%20York%20City%20Benchmarking%20and%20Transparency%20Policy%20Impact%20Evaluation....pdf>

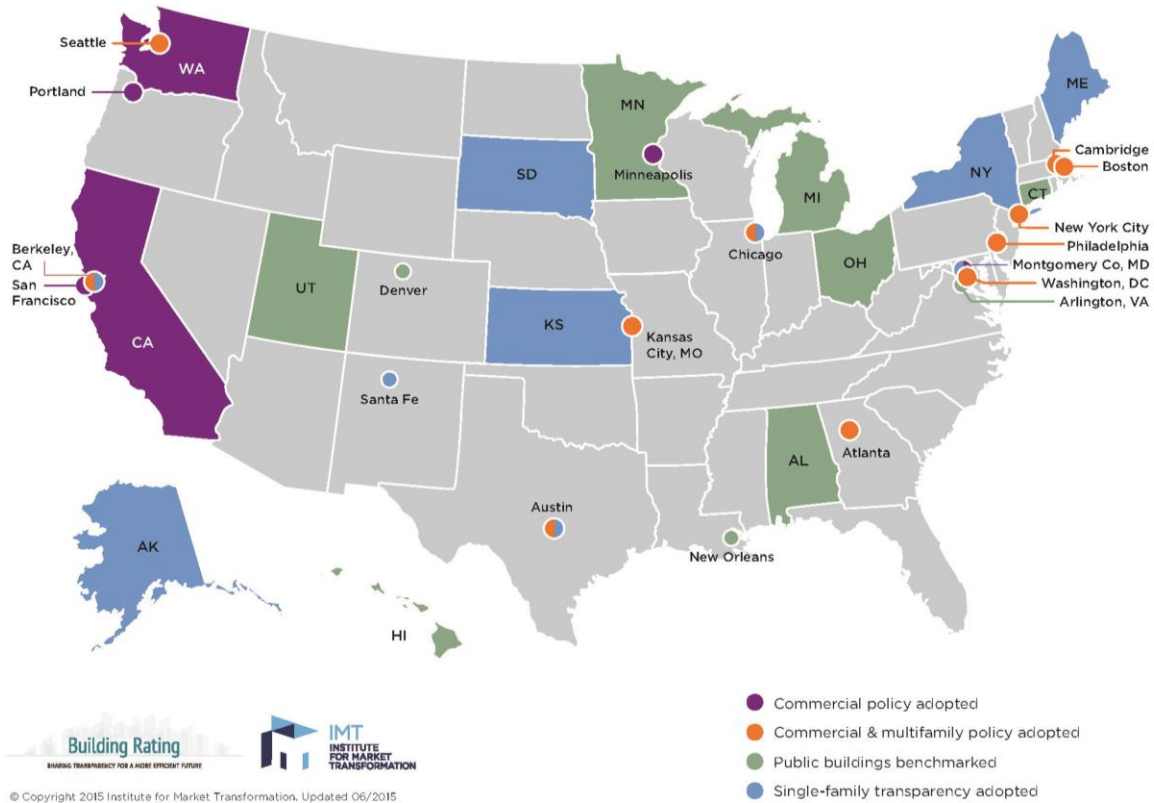
<sup>8</sup><http://www.seattle.gov/environment/buildings-and-energy/energy-benchmarking-and-reporting>

<sup>9</sup><http://www.ci.minneapolis.mn.us/environment/energy/WCMS1P-116916>

<sup>10</sup><http://www.imt.org/policy/building-energy-performance-policy>



Figure 2 | US Building Benchmarking and Transparency Policies



Graphic courtesy of Institute for Market Transformation, 2015

## BENCHMARKING ACTIVITY IN SOUTHWEST STATES

In the Southwest, there are currently no mandatory benchmarking policies for private-sector buildings; however some state and local governments have adopted benchmarking requirements for public buildings. Additionally, one city in the region is currently developing a rating and reporting ordinance for city-owned, commercial and industrial buildings. In general, interest in benchmarking programs as a way to reduce energy use in buildings has risen in recent years. This section details benchmarking activity in each state.

### Arizona

The State of Arizona does not have a benchmarking and transparency requirement for private-sector buildings; however, the state has implemented energy benchmarking requirements for some state buildings. In 2003, the legislature passed HB 2324 which required that the Department of Administration, Arizona Board of Regents, and the Department of Transportation reduce energy use in their respective building systems by 10% per square foot on or before July 1, 2008, and by 15% per square foot by July 1, 2011.<sup>11</sup> The bill also included requirements for new construction

<sup>11</sup> [http://www.azleg.state.az.us/legtext/46leg/1r/summary/h.hb2324\\_04-23-03\\_astransmittedtogovernor.doc.htm](http://www.azleg.state.az.us/legtext/46leg/1r/summary/h.hb2324_04-23-03_astransmittedtogovernor.doc.htm)

projects to meet the recommended standards of the International Energy Conservation Code (IECC) or the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).<sup>12</sup> Executive Order 2008-29 required all state executive agencies to conduct an analysis of energy usage by January 2009 and identify what is required of each to reach the existing goals for energy usage reductions in state buildings contained in ARS 41-451.<sup>13</sup>

Many local governments in Arizona are tracking energy use in public buildings, with or without transparency requirements. The City of Phoenix has been tracking energy use in its buildings for more than 20 years using spreadsheets and *ENERGY STAR Portfolio Manager*. Other local governments that are actively benchmarking energy use in their buildings include Maricopa County and the cities of Chandler, Flagstaff, Peoria, Mesa, Scottsdale, Tempe, and Tucson. Most of these jurisdictions use *ENERGY STAR Portfolio Manager* to benchmark energy use. Flagstaff currently uses *MyEnergyPro* to benchmark its buildings, but will likely shift to *ENERGY STAR Portfolio Manager* in the future. Chandler, Tucson and Phoenix have plans to implement *EnergyCAP* software, which is compatible with *ENERGY STAR Portfolio Manager*, in the near future.

The Greater Phoenix Chapter of Building Owners and Managers Association (BOMA) administers the “*Kilowatt Crackdown*” challenge for commercial and industrial buildings in Phoenix and its suburbs. More than 500 buildings have participated and BOMA Greater Phoenix has recognized leaders in energy efficiency as part of this initiative since 2009. Awards are available in several categories based on building type.<sup>14</sup>

While there has been some movement towards benchmarking building energy use at the state and local levels in Arizona, the state legislature recently enacted restrictions on mandatory benchmarking programs. SB 1241, signed into law in 2015, prohibits cities and towns from requiring energy measurement and reporting of an owner, operator, or tenant of a business, commercial building, or multifamily housing property.<sup>15</sup>

## Colorado

The State of Colorado has not adopted a benchmarking and transparency requirement for private-sector buildings at this time, but state agencies are subject to Executive Order D005 05, which directs all state agencies and departments to initiate an energy management program to monitor and manage utility usage and costs.<sup>16</sup> All state buildings are directed to use EnergyCAP to track building energy use. The Order also directs state agencies and departments to apply the U.S. Green Buildings Council’s *Leadership in Energy and Environmental Design Green Building Rating System for Existing Buildings* (LEED-EB) in operating, maintaining and managing existing buildings, to the

<sup>12</sup> <http://www.azleg.gov/FormatDocument.asp?inDoc=/ars/34/00451.htm&Title=34&DocType=ARS>

<sup>13</sup> <http://database.aceee.org/state/arizona>

<sup>14</sup> <http://www.bomaphoenix.org/?167>

<sup>15</sup> <http://www.azleg.gov/legtext/52leg/1r/proposed/h.1241wp.pdf>

<sup>16</sup> <https://www.colorado.gov/pacific/sites/default/files/d00505.pdf>

extent applicable and practicable; and to incorporate *LEED for New Construction* practices to design new buildings, to the extent that they are deemed cost-effective.<sup>17</sup>

As of September 2015, the City of Boulder was considering a rating and reporting requirement (“Building Performance Ordinance”) for city-owned, commercial and industrial buildings. The proposed ordinance will require public disclosure of building energy use data and energy ratings for city-owned buildings over 5,000 square feet (sf), new buildings over 10,000 sf, and existing buildings over 50,000 sf in 2016. By 2020, existing buildings over 20,000 sf will be required to comply under the proposed ordinance.<sup>18</sup> The proposed ordinance will also include phased-in requirements for energy efficiency, including energy assessments, lighting upgrades and retro-commissioning. Multifamily buildings are not required to comply with the proposed ordinance since the city has implemented energy efficiency standards for rental housing under its *SmartRegs* program.

The City and County of Denver passed Executive Order 123 in 2007, which requires that new construction and major renovations of city buildings achieve LEED Gold or Platinum certification and also requires benchmarking of existing city buildings. Additionally, the City and County of Denver has committed seven million sf to the U.S. Department of Energy (DOE) *Better Buildings Challenge*, with the goal of reducing energy use by 20% per square foot by 2020, as measured from its 2011 baseline. The City is well on its way to meeting these goals, having achieved 9% energy savings across its buildings portfolio from 2011 to 2014, well ahead of the 7.5% energy savings target for those years. The City and County of Denver has been tracking energy use in its buildings for internal purposes since 2004.

The City and County of Denver was selected to participate in the *City Energy Project*, a joint initiative of the Natural Resources Defense Council (NRDC) and IMT to create healthier and more prosperous American cities by improving the energy efficiency of buildings. In October of 2014, the City and County of Denver launched a benchmarking program for large commercial and multifamily buildings.<sup>19</sup> There are currently 115 buildings enrolled in this program. The program has also led to development of six case studies which include stories of how buildings have significantly improved their ENERGY STAR score. To engage commercial building tenants, the city has also developed the “*Lease for Efficiency Challenge*” in which tenants commit to ask about a building’s *ENERGY STAR Portfolio Manager* score when leasing space in Denver.<sup>20</sup>

Denver Metro BOMA oversees the “*Watts to Water*” program which is dedicated to energy and water efficiency. The goal of the program is to create a more sustainable built environment in the Denver metropolitan area. By using *ENERGY STAR Portfolio Manager* as a benchmarking tool, *Watts to Water* partners help properties reduce their energy and water consumption by offering program participants free educational sessions, technical support and rebate programs.<sup>21</sup> Participants

<sup>17</sup> Ibid.

<sup>18</sup> [www.BoulderBuildingPerformance.com](http://www.BoulderBuildingPerformance.com)

<sup>19</sup> <http://www.denvergov.org/environmentalhealth/EnvironmentalHealth/EnvironmentalQuality/BuildingsLeadingtheWay/tabid/445816/Default.aspx>

<sup>20</sup> <http://www.denvergov.org/environmentalhealth/EnvironmentalHealth/EnvironmentalQuality/DenverCityEnergyProject/TenantsLeadingtheWay/tabid/445817/Default.aspx>

<sup>21</sup> <http://www.wattstowater.org/>



receive recognition in Denver publications and on the program website, with the top performers receiving awards. The *Watts to Water* program is open to all Denver area office buildings, medical office buildings and multifamily buildings, as well as hotels of 5,000 sf or larger.

Finally, Denver is home to the *Denver 2030 District*, a local community of high performance buildings in Denver that aims to dramatically reduce energy and water consumption and reduce emissions from transportation, while increasing competitiveness in the business environment and owners' returns on investment.<sup>22</sup> The *Denver 2030 District* consists of over 20 million sf of member buildings, representing one-third of the overall building area in the city's downtown district. The 2030 District recently released its first annual report detailing progress to date.<sup>23</sup> There are 10 established 2030 Districts in the nation working towards the emissions reduction goals of the *2030 Challenge for Planning*.<sup>24</sup>

Several other local governments benchmark energy use in their buildings for internal purposes, including Adams County, Boulder County and the cities of Arvada, Aspen, Durango, Fort Collins, Golden and Loveland. These local governments use *ENERGY STAR Portfolio Manager* and other applications such as *Planet Footprint*, *Utilities Direct* and *EnergyCAP* to benchmark energy use.

## Nevada

The State of Nevada does not currently require benchmarking of public or private buildings. According to the Nevada Governor's Office of Energy (NGOE), a request for proposals will be issued in 2015 to facilitate a data benchmarking project for state and local buildings. (Local governments will be given the opportunity to opt in.) The NGOE plans to start with about 500 facilities over 10,000 sf, and energy use information will be made available to the public through an online portal. The upcoming benchmarking effort should provide insight into potential energy efficiency improvements for state buildings and uncover new opportunities that may have developed since an earlier benchmarking study was undertaken by CLEAResult, a national energy efficiency consulting company.<sup>25</sup>

Las Vegas uses *ENERGY STAR Portfolio Manager* to benchmark energy use in 16 of its buildings, two of which are being considered for ENERGY STAR certification, and plans to extend benchmarking requirements to all city facilities and community centers in the near future. The city is also upgrading its utility database to provide a robust dashboard that allows customizable reporting on a number of parameters and variables, enabling the city to better monitor and track sustainability indicators, including energy consumption. In 2013, Massachusetts Institute of Technology partnered with the City of Las Vegas to develop an Energy Efficiency Market Transformation Study for commercial buildings, which includes recommendations for commercial energy efficiency.<sup>26</sup>

<sup>22</sup> <http://www.2030districts.org/denver/about>

<sup>23</sup> <http://www.2030districts.org/denver/news/denver-2030-district-2014-annual-report>

<sup>24</sup> <http://www.2030districts.org/districts>

<sup>25</sup> [http://energy.nv.gov/uploadedFiles/energynvgov/content/Programs/2012-04-30\\_NVStateBldgsBenchmarkRpt.pdf](http://energy.nv.gov/uploadedFiles/energynvgov/content/Programs/2012-04-30_NVStateBldgsBenchmarkRpt.pdf)

<sup>26</sup> <http://web.mit.edu/colab/gedi/pdf/eemts/MIT-CoLab-Las-Vegas.pdf>

North Las Vegas has been tracking energy data for the past seven years using Utilities Direct software, and the Reno has been tracking energy data for the past six years using spreadsheets and *MyEnergyPro*.

With regard to utilities in the state, NV Energy administers a successful benchmarking program for schools. NV Energy provides technical guidance, design assistance and financial incentives to help schools identify and implement cost-effective energy efficiency upgrade projects through its *Energy Smart Schools* program. As part of this effort, the *Energy Smart Schools* technical team is available to help schools benchmark energy use, formulate a long-term plan for increasing efficiency, evaluate specific opportunities and technologies, and calculate savings. The *Energy Smart Schools* program uses *ENERGY STAR Portfolio Manager* to compare building performance. Any school located in NV Energy's service territory is eligible to participate in this program, including public K-12 schools, private schools and institutions of higher education.<sup>27</sup> Since the program's launch in 2007, every K-12 school district served by NV Energy has completed energy efficiency upgrade projects. The program has achieved total energy savings of 70 million kWh, annual savings of \$7 million, and \$2.2 million in incentives paid.<sup>28</sup>

## New Mexico

The State of New Mexico has not implemented a benchmarking and transparency requirement for private commercial or multifamily buildings, but several state and local government building benchmarking initiatives are underway. The state has begun benchmarking state buildings, with the Facilities Management Division collecting energy use data and entering it into *ENERGY STAR Portfolio Manager*. The Division handles major renovation and acquisition for all 700 buildings owned by the General Services Department statewide.

Santa Fe has been tracking energy data from its municipal buildings since 2009. Santa Fe County tracks energy use in county facilities, with data from 31 properties entered into *ENERGY STAR Portfolio Manager*. Started in 2011, the county's benchmarking initiative includes various building types such as administrative offices, jails, community centers and fire stations.

Silver City measures energy use in all town buildings, and the town's sustainability plan includes requirements for tracking energy use from municipal operations; energy audits and implementation of cost-effective measures for municipal buildings; and energy reductions in residential, business, and municipal buildings. Silver City's sustainability plan also encourages efficient building energy codes, green building certifications and incentives for departments or sections that save the most energy. The town's buildings being benchmarked represent about 144,000 sf.

<sup>27</sup> The minimum size building eligible for the EPA Portfolio Manager Score is 5,000 square feet.

<sup>28</sup> <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CB8QFjAAahUKFwi8-s-Y29vHAbUICplKHVRfDV8&url=https%3A%2F%2Fwww.nvenergy.com%2Fbusiness%2Fsaveenergy%2Fdocuments%2F2015-ESS-Facts.pdf&usg=AFQjCNGa-3mltVRxF7s6FIABMrpcDEyapA&sig2=9ISfYqTZni0yua-KprHc5w>

In April 2015, the *Albuquerque 2030 District* was officially established. The *Albuquerque 2030 District* is a group of property owners and managers, professionals and community groups committed to the development of high-performance buildings and a healthier, livable city of the future. The still-forming District boundary includes greater Downtown, University of New Mexico and Central New Mexico Community College main campuses, and the commercial corridors that connect those centers.<sup>29</sup> The district currently consists of about 10 million sf.

New Mexico Gas Company launched the *Schools Conserving Our Resources and Energy* (SCORE) pilot program in 2011 and subsequently developed it into a building efficiency program. The SCORE program provides technical and financial support for the implementation of energy efficiency upgrades to help school districts improve energy efficiency and reduce operating costs. Eight school districts, representing 275 buildings and 25 million sf, have participated in the program to date. Participating schools are required to benchmark energy use in *ENERGY STAR Portfolio Manager*.

## Utah

The State of Utah has not adopted a benchmarking requirement for the private sector. However, the state requires each state agency to coordinate with the Division of Facilities and Construction Management to benchmark large state-owned facilities and to develop and implement strategies for improving energy efficiency and reducing energy costs. In addition, state-funded higher education institutions have a long track record of monitoring utility energy usage internally. Over the last half-decade, more than 50 state-owned facilities have been LEED certified; benchmarking is required for projects certified under LEED 2009 or later.

Local governments are also creating their own programs. In January 2015, Salt Lake City Mayor Ralph Becker announced Executive Order: Comprehensive Energy Management in Salt Lake City Municipal Facilities. The Executive Order requires benchmarking of city facilities 3,000 sf or larger using *ENERGY STAR Portfolio Manager* (or comparable tools approved by the Steering Committee) and disclosure of energy performance information to city employees and the public. It also requires city staff to develop energy management plans that include energy assessments, retrocommissioning, building operator training, employee engagement and renewable energy opportunities. The Executive Order references the current policy for new city facilities and major renovations to meet *City Net Zero* and LEED Gold requirements.<sup>30</sup> Salt Lake City has been tracking energy use internally since 2005.

Salt Lake City was selected to participate in the *City Energy Project*. As part of this project, Salt Lake City launched *Project Skyline* in May 2014 to assist with implementing the economic, energy efficiency, climate and air quality efforts outlined in Sustainable Salt Lake – Plan 2015.<sup>31</sup> One component of *Project Skyline* is the Mayor’s Skyline Challenge, a multi-year competition to reduce

<sup>29</sup> <http://www.2030districts.org/albuquerque/news/albuquerque-steps-urban-sustainability-leader-becoming-world%E2%80%99s-10th-2030-district>

<sup>30</sup> [www.slcdocs.com/slccgreen/energyefficiencyexecutiveorder.pdf](http://www.slcdocs.com/slccgreen/energyefficiencyexecutiveorder.pdf)

<sup>31</sup> <http://slcgov.com/node/1407>

energy use in buildings. Over 40 properties participated in the first year of the Mayor's Skyline Challenge, representing nearly 9 million sf of municipal, institutional, commercial and industrial building space.

In Salt Lake County, energy management and benchmarking is a high priority for County Mayor Ben McAdams, undertaken as part of a facility analysis which began in April 2015. This initiative is part of a County "dashboard" project being developed to increase government transparency. The majority of county facilities will be subject to benchmarking requirements, and facility energy performance data will ultimately be disclosed with the general public. Salt Lake County has been tracking energy use in its buildings internally over the course of the current and previous administration.

In Park City, benchmarking and disclosure of municipal facilities is part of an annual municipal carbon footprinting process. Starting in 2007, all major city facilities larger than 2,500 sf are benchmarked annually using *ENERGY STAR Portfolio Manager*. Facility energy performance is reported to City Council.

Other local governments in Utah such as Moab, Alta and Springdale have been tracking energy data for internal purposes since 2007.

BOMA Utah administers the "*Kilowatt Crackdown Competition*" for the commercial real estate community in the state. Participants benchmark building energy use in *ENERGY STAR Portfolio Manager* and receive a list of energy saving opportunities. There are currently 17 property managers and 45 buildings participating in the competition, including commercial offices, medical offices and some industrial buildings. All participants receive a promotional package which includes engineering certification for properties that qualify for the ENERGY STAR label, advertising and recognition, and assistance with identifying energy conservation measures. Winners receive a prize package containing valuable products, services and discounts valued at over \$1,000.

## Wyoming

There is no statewide requirement for benchmarking in Wyoming. Gillette has been tracking energy use in city buildings since 2009 using *ENERGY STAR Portfolio Manager*. Gillette is also a participant in the DOE *Better Buildings Challenge*, with the goal of reducing energy use in commercial and industrial buildings 20% by 2020.

Teton County has benchmarked energy use in its buildings since 2006. Teton County currently uses *Planet Footprint* to track energy use but is in the process of transferring energy use data into *ENERGY STAR Portfolio Manager*. Teton County posts quarterly reports online detailing the county's energy use.

Jackson, WY has been tracking energy use in its municipal buildings since 2006.

## SUMMARY OF BENCHMARKING PROGRAMS IN THE SOUTHWEST

The following table summarizes benchmarking activity in each state, including fields for program administrator, policy or program name, start date, and building types covered. The program administrator is often a state or local government (i.e., city, county, or town). The field for policy or program name details relevant bills, acts, local ordinances, executive orders or notable program names.

Table 1 | Summary of Benchmarking Activity in the Southwest

Program Administrator	State	Policy or Program Name	Start Date	Building Types
State of Arizona	AZ	HB 2324*	2003	State buildings (various)
City of Chandler	AZ	N/A	2008	City buildings
City of Flagstaff	AZ	N/A	2008	City buildings
City of Mesa	AZ	N/A	2010	City buildings
City of Peoria	AZ	N/A	1991	City buildings
City of Phoenix	AZ	N/A	1994	City buildings
City of Scottsdale	AZ	N/A	2010	City buildings
City of Tempe	AZ	N/A	2012	City buildings
City of Tucson	AZ	N/A	1996	City buildings
Maricopa County	AZ	N/A	2001	County buildings
BOMA Phoenix	AZ	Kilowatt Krackdown	2009	Commercial and industrial
City of Arvada	CO	N/A	2009	City buildings
City of Aspen	CO	N/A	1964	City buildings
City of Boulder	CO	Building Performance Ordinance	2016 (planned)	City-owned, commercial and industrial
City & County of Denver	CO	Executive Order 123*	2007	City buildings
City & County of Denver	CO	N/A	2004	City buildings
City & County of Denver	CO	Denver City Energy Project	2014	Commercial and multifamily
City of Durango	CO	N/A	2007	City buildings
City of Fort Collins	CO	N/A	2002	City buildings
City of Golden	CO	N/A	2006	City buildings
City of Loveland	CO	N/A	1994	City buildings



COMMERCIAL BUILDING BENCHMARKING PROGRAMS IN THE SOUTHWEST

Program Administrator	State	Policy or Program Name	Start Date	Building Types
Adams County	CO	N/A	2013	County buildings
Boulder County	CO	N/A	1994	County buildings
Denver 2030 District	CO	2030 Challenge for Planning	2013	Commercial and multifamily
Denver BOMA	CO	Watts to Water	2011	Office buildings, hotels, and multifamily
City of Las Vegas	NV	N/A	2009	City buildings
City of North Las Vegas	NV	N/A	2007	City buildings
City of Reno	NV	N/A	2008	City buildings
NGOE	NV	TBD	TBD	State buildings
NV Energy	NV	Energy Smart Schools	2007	Schools
State of New Mexico	NM	N/A	2008	State buildings
City of Santa Fe	NM	N/A	2009	City buildings
Santa Fe County	NM	N/A	2011	County buildings
Town of Silver City	NM	N/A	2011	Town buildings
Albuquerque 2030 District	NM	2030 Challenge for Planning	2015	Commercial and multifamily
New Mexico Gas Company	NM	SCORE Program	2011	Schools
City of Moab	UT	N/A	2007	City buildings
Park City	UT	N/A	2007	City buildings
Salt Lake City	UT	EO: Comprehensive Energy Management in Salt Lake City Municipal Facilities*	2015	City buildings
Salt Lake City	UT	N/A	2005	City buildings
Salt Lake City	UT	City Energy Project	2014	Commercial, multifamily and industrial
Salt Lake County	UT	N/A	2015	County buildings
Town of Alta	UT	N/A	2007	Town buildings
Town of Springdale	UT	N/A	2007	Town buildings
BOMA Utah	UT	Kilowatt Crackdown Competition	2014	Commercial and industrial
City of Gillette	WY	N/A	2009	City buildings
Teton County	WY	N/A	2006	County buildings
Town of Jackson	WY	N/A	2006	Town buildings

\* Denotes requirement



## ADDITIONAL RESOURCES FOR BENCHMARKING PROFESSIONALS

### ***2011/2012 Seattle Building Energy Benchmarking Analysis Report*** **Seattle Office of Sustainability and Environment, 2014**

<http://www.seattle.gov/environment/buildings-and-energy/energy-benchmarking-and-reporting>

This report shares an in-depth analysis of 2011-2012 Seattle building benchmarking data. The report includes compliance rates, data analysis, overview of citywide building characteristics, energy performance results, and recommendations to improve accuracy and further study objectives.

### ***2012 Energy Benchmarking Report*** **City of Minneapolis, 2013**

<http://www.ci.minneapolis.mn.us/environment/energy/WCMS1P-116916>

The City of Minneapolis' benchmarking report analyzes the 2013 energy use of 194 commercial and 171 public buildings that submitted data to the City, as required by the building energy benchmarking and transparency ordinance. Of the 146 largest properties in Minneapolis, 27 are high-performers, 51 are considered above-average and 68 are below-average performers.

### ***Benchmarking and Disclosure: State and Local Policy Design Guide & Sample Policy Language*** **SEE Action, 2012**

<http://energy.gov/eere/wipo/downloads/benchmarking-and-disclosure-state-and-local-policy-design-guide-and-sample>

This document is intended to guide policymakers in the design of a commercial benchmarking and disclosure policy and to provide a standard policy foundation for jurisdictions. It presents sample policy language and provides discussion points on key provisions.

### ***Benchmarking and Transparency Policy and Program Impact Evaluation Handbook*** **Navigant Consulting, Inc. and Steven Winter Associates, Inc., 2015**

<http://energy.gov/eere/slsc/downloads/benchmarking-and-transparency-policy-and-program-impact-evaluation-handbook>

This handbook provides both a strategic planning framework and standard methodologies to determine the energy and non-energy benefits of benchmarking and transparency policies and programs that have recently been adopted in jurisdictions across the United States. The handbook provides a simple "how to" guide which outlines clear steps and data requirements for the primary analysis methods recommended for use by local jurisdictions to assess the impacts of their benchmarking and transparency policies.

### ***Building Energy Rating & Disclosure Policies: Update and Lessons from the Field.*** **NEEP, 2013**

<http://www.neep.org/building-energy-rating-and-disclosure-policies>

NEEP's report provides an assessment of policy options and outlines a road-map for successfully implementing building energy rating and disclosure policies. The report describes a range of

approaches for promoting and developing building energy rating and disclosure policies at the state or local level.

### ***DOE Better Buildings Accelerators***

<http://www1.eere.energy.gov/buildings/betterbuildings/accelerators>

The Better Buildings Initiative is a national leadership initiative calling on corporate chief executive officers, university presidents, utilities, state and local officials and other leaders to make substantial commitments to improve the energy efficiency of their buildings and plants, save money and increase competitiveness. As part of the President's Climate Action Plan, the DOE is expanding this initiative to engage leaders in a set of Better Buildings Accelerators designed to demonstrate specific innovative policies and approaches which will accelerate investment in energy efficiency. Through the Better Buildings Energy Data Accelerator, local governments are joining forces with their local utilities to make it easier for building owners to get access to whole-building energy usage data for the purposes of benchmarking their buildings.

### ***DOE Buildings Performance Database***

<http://energy.gov/eere/buildings/building-performance-database>

The Building Performance Database (BPD) is the nation's largest dataset of information about the energy-related characteristics of commercial and residential buildings. The BPD combines, cleanses, anonymizes and makes available to the public data collected by federal, state and local governments, utilities, energy efficiency programs, building owners and private companies. The web site allows users to explore the data across real estate sectors and regions and to compare various physical and operational characteristics to gain a better understanding of market conditions and trends in energy performance.

### ***DOE Standard Energy Efficiency Data Platform (SEED)***

<http://energy.gov/eere/buildings/standard-energy-efficiency-data-platform>

The SEED Platform™ is designed to help organizations manage and share large datasets about building performance that can be useful for state and local governments implementing building benchmarking regulations, building managers, energy efficiency program managers, and others. SEED can help public entities that are implementing benchmarking and disclosure laws, but the core functionality is highly flexible and can be useful for a range of other purposes.

### ***ENERGY STAR Portfolio Manager Benchmarking and Energy Savings***

#### **EPA 2012**

[http://www.energystar.gov/ia/business/downloads/datatrends/DataTrends\\_Savings\\_20121002.pdf?3d9b-91a5](http://www.energystar.gov/ia/business/downloads/datatrends/DataTrends_Savings_20121002.pdf?3d9b-91a5)

This analysis of *ENERGY STAR Portfolio Manager*, published by the EPA, examines benchmarking and energy savings. According to data from *ENERGY STAR Portfolio Manager*, more than 35,000 buildings received ENERGY STAR scores from 2008-2011 and realized savings every year, as measured by average weather-normalized energy use intensity and the ENERGY STAR score. The average annual energy savings were 2.4%, with a total energy savings of 7.0% and score increase of 6 points over the period of analysis.

***ENERGY STAR Portfolio Manager Quick Start Guide***

<http://www.energystar.gov/buildings/tools-and-resources/portfolio-manager-quick-start-guide>

EPA's *ENERGY STAR Portfolio Manager* helps building owners and managers measure and track the energy use, water use and greenhouse gas emissions of buildings. The results can be used to identify under-performing buildings, set investment priorities, verify efficiency improvements and receive EPA recognition for superior energy performance. This guide outlines the steps to get started using the new Portfolio Manager to benchmark properties, assess performance and view results.

***Green Lease Library***

<http://www.greenleaselibrary.com/>

This website is the result of collaboration among several stakeholders in the green leasing community and is maintained by the Institute for Market Transformation (IMT). The website's purpose is to consolidate green leasing resources to provide a one-stop-shop for all audience types – from building owners and tenants to lawyers and building raters. The green lease library is organized by resource type and resources are tagged by relevance to audience and building types.

***IMT Building Energy Performance Policy Website***

<http://www.imt.org/policy/building-energy-performance-policy>

IMT promotes diverse market-based public policies and voluntary programs that can significantly cut energy waste and boost buildings' efficiency. This website includes resources on benchmarking programs, along with information on existing policies, case studies and fact sheets.

***New York City Benchmarking and Transparency Policy Impact Evaluation Report***

**Navigant Consulting, Inc., Steven Winter Associates, Inc., and Newport Partners, LLC, 2015**

<http://energy.gov/sites/prod/files/2015/05/f22/DOE%20New%20York%20City%20Benchmarking%20and%20Transparency%20Policy%20Impact%20Evaluation....pdf>

This report provides readers with a thorough understanding of the approach and methodologies used to evaluate New York City's benchmarking and transparency policy, Local Law 84, as well as the results of the application of those methodologies to the early period of the policy's implementation. This report presents a policy evaluation framework used for assessing the impacts of the policy in three key areas: market transformation progress, gross and net energy impacts, and non-energy impacts.

## EXISTING POLICIES

Please use the links below to access existing legislation requiring energy benchmarking and transparency for private-sector buildings. These policies have been adopted by jurisdictions outside of the Southwest but may be helpful for development of new programs and policies within the region.

[California Assembly Bill 1103](#)

[Washington, DC Clean and Affordable Energy Act of 2008](#)

[Austin, TX Energy Conservation Audit and Disclosure Ordinance](#)

[Washington SB 5854](#)

[New York, NY Local Law 84 \(LL84\)](#)

[Seattle, WA Ordinance 123226 and 123993](#)

[San Francisco, CA Existing Commercial Buildings Energy Performance Ordinance](#)

[Philadelphia, PA Bill No. 120428-A](#)

[Boston, MA Building Energy Reporting and Disclosure Ordinance](#)

[Minneapolis, MN Ordinance 47.190](#)

[Minnesota Benchmarking Law for Public Buildings](#)

[Chicago, IL Energy Benchmarking Ordinance](#)

[Montgomery County, MD Building Energy Benchmarking Law](#)

[Cambridge, MA Building Energy Use Disclosure Ordinance](#)

[Berkeley, CA Energy Saving Ordinance \(Berkeley Municipal Code 19.81\)](#)

[Atlanta, GA Commercial Energy Efficiency Ordinance](#)

[Portland, OR Energy Performance Reporting Policy for Commercial Buildings](#)

[Kansas City, MO Energy Empowerment Ordinance](#)