



Energy Commission

CONSENT CALENDAR
September 10, 2013

To: Honorable Mayor and Members of the City Council
From: Berkeley Energy Commission
Submitted by: Scott Murtishaw, Chair
Subject: Recommended Strategy for Energy Ordinances

RECOMMENDATION

Adopt a Resolution directing staff to initiate a public process to prepare an ordinance(s) for City Council and community consideration to update the City's existing Residential and Commercial Energy Conservation Ordinances.

SUMMARY

The Energy Commission believes that the current Residential and Commercial Energy Conservation Ordinances (RECO and CECO) must be updated or replaced to increase energy and water efficiency, lower utility costs, and reduce GHG emissions in existing buildings. Updates should result in the following main outcomes:

- Energy information disclosure to enable property owners to leverage their investment in energy upgrades in the marketplace and to enable prospective tenants and buyers to assess the energy performance and associated costs of a given building
- Consistency with the Title 24 California Energy Code
- User-friendly compliance and compliance tracking for residents and businesses through improved information technology systems and on-call assistance
- Minimized cost of energy upgrades through synergy with ratepayer-funded utility incentive programs such as Energy Upgrade California
- Increased recognition for residential and commercial energy efficiency leaders within the community through awards and other recognition efforts
- Improved ability for City staff to track compliance, direct energy services to underperforming buildings or areas, and to measure and report the energy, cost and GHG reductions associated with the ordinance

The Energy Commission recommends that staff be directed to work with community stakeholders to develop a draft ordinance for Council and community consideration that achieves these main outcomes. The Energy Commission also recommends that the City continue to lead by example by regularly reporting energy consumption in municipal buildings and continuing to increase municipal energy efficiency.

FISCAL IMPACTS OF RECOMMENDATION

Conducting a public process designed to inform development of the ordinance is included in the Office of Energy & Sustainable Development (OESD) work plan and baseline budget. The costs of implementation of a new ordinance are unknown at this time but should be identified as part of the process of developing the ordinance. It is expected that filing fees associated with ordinance compliance will cover all City costs for implementation.

CURRENT SITUATION AND ITS EFFECTS

According to the Berkeley Climate Action Plan (CAP), energy use in residential and commercial buildings is a major source of greenhouse gas emissions – approximately 45% of total community-wide emissions. The goal of the Berkeley CAP is to reduce greenhouse gas (GHG) emissions to 33% below 2000 levels by 2020. This target is ambitious, and achieving it rests on increasing energy efficiency in Berkeley's existing residential, commercial, and municipal building stock. Importantly, increased energy efficiency has non-energy benefits, including improved occupant comfort and indoor air quality and lower utility bills.

The GHG emissions associated with residential and commercial building energy use decreased since 2000, but significant additional reductions are still needed.

As of the end of 2011, residential energy use (combined electricity and natural gas) decreased 9% compared to 2000 levels. Because the energy mix used to produce electricity also became "greener," total residential GHG emissions decreased 17% in that same time period. While this downward trend is encouraging, significant additional reductions are required. Specifically, an annual reduction of approximately 214,000 megawatt hour equivalents (MWh eq.), the equivalent of over 12,000 Berkeley households, is required to achieve the 2020 target for residential GHG emissions. Approximately 71% of residential emissions are from natural gas and 29% are from electricity.

In Berkeley's commercial buildings (i.e., non-residential), electricity consumption decreased 6% between 2000 and 2011, but natural gas consumption increased approximately 18% in that same time period. Commercial GHG emissions are 10% below 2000 levels as of 2011. Achieving the community's target for commercial GHG emissions requires a reduction of approximately 333,000 MWh eq. annually by 2020. Approximately 60% of commercial emissions are from natural gas and 40% are from electricity. See Climate Action Plan goals and metrics on building energy use at: <http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=70982>

RECO and CECO have played important roles in increasing building energy and water efficiency and reducing Berkeley's greenhouse gas emissions. The ordinances prescribe a list of basic, cost-effective energy and water saving measures that must be installed at the point of sale or during significant remodels. RECO and CECO are

fundamental to Berkeley's climate action effort because they serve as a minimum standard for energy efficiency in existing buildings.

Despite the fact that RECO and CECO have served as critical components of Berkeley's energy efficiency policy to date, the Energy Commission believes that the current ordinances must be updated or replaced in order to more effectively enable increased energy and water efficiency and reduced GHG emissions in existing buildings. The current ordinances include measures that are out of date with building science and lag behind the current Title 24 California Energy Code. Additionally, energy efficiency opportunities are not "one-size-fits all" and the current required measures may not be the best choice for all situations. Some of the current required measures, such as attic insulation, may also preclude future opportunities for deeper energy savings, such as thorough air sealing. Furthermore, the impact of the current RECO and CECO is limited by the number of compliance trigger events. While the current trigger events -- time of sale and significant remodel -- are good times to install efficiency measures, the number of buildings affected on an annual basis is relatively small. The number of single family properties triggered by sale and remodel ranges from 500 to 1,000 annually; multifamily and commercial transactions impact very few buildings, averaging less than 40 per year.

In addition to the need to modify the RECO and CECO, the information systems currently deployed are neither user-friendly nor easily accessible. They do not provide a web interface that enables building owners, as well as prospective buyers and tenants, access to compliance status and energy information of a building. Without that critical information informed decisions about the value of energy efficiency and comparisons between properties are difficult.

Finally, the current ordinances do not provide a way to measure ordinance outcomes and the associated contribution to energy, utility bill, and GHG emissions reductions. Systems are not in place that enable the City to report which specific measures were installed and to estimate the associated savings.

BACKGROUND

The Energy Commission recommends that City Council direct staff to develop a new energy saving ordinance that would achieve the following main outcomes:

- Energy information disclosure to enable property owners to leverage their investment in energy upgrades in the marketplace and to enable prospective tenants and buyers to assess the energy performance and associated costs of a given building
- Consistency with the Title 24 California Energy Code
- User-friendly compliance and compliance tracking for residents and businesses through improved information technology systems and on-call assistance
- Minimized compliance costs through synergy with ratepayer-funded utility incentive programs such as Energy Upgrade California

- Increased recognition for residential and commercial energy efficiency leaders within the community through awards and other recognition efforts
- Improved ability for City staff to track compliance, direct energy services to underperforming buildings or areas, and to measure and report the energy, cost and GHG reductions associated with the ordinance

Energy information disclosure policies are a market transformation strategy that helps make the energy performance of a given building transparent and an explicit component of the building's value. Property owners then have the potential to market and leverage the energy efficiency of a building. Likewise, energy information disclosure helps prospective tenants and buyers to compare energy performance across buildings. In addition, energy information disclosure policies enable local government and energy service providers to direct resources and assistance to underperforming buildings. There are a variety of existing information reporting tools and templates; the exact energy information that residents and businesses would disclose in order to comply with an updated Berkeley ordinance will have to be identified in the process of developing the ordinance.

Cities around the country are adopting energy information disclosure policies. Seven cities have passed legislation requiring commercial buildings to track and disclose energy consumption information. These cities include Austin, District of Columbia, Minneapolis, New York, Philadelphia, San Francisco and Seattle. In California Assembly Bill 1103 (2007) was passed with the intent of providing access to commercial building energy information. AB 1103 rulemaking is still in process.

On the residential side, six states and four cities have adopted residential energy disclosure laws, including Austin, Chicago, Montgomery County, MD and Santa Fe.

In Berkeley, approximately 90 non-residential buildings are already tracking their energy performance using EPA's Energy Star Portfolio Manager tool. These include municipal buildings, Berkeley Unified School District buildings, office buildings, hotels and others. Several of these buildings received Berkeley Energy Smart Awards in 2012. Awards and recognition programs create positive reinforcement that supports information disclosure policies, raises the public profile of building performance and enhances interest in energy efficiency.

As well as creating an updated, more effective energy ordinance, the City must also ensure that compliance is easy and user-friendly for residents and businesses. Residents and businesses should be able to check and report compliance online. An online system will also better enable the City to quantify and report the ordinance's contribution to the community's energy and GHG reduction goals.

The ordinance should be developed through a public process that includes public workshops and direct meetings with key community stakeholders. The Energy Commission is willing to host a series of public workshops for this purpose.

The Commission approved this report and resolution on July 25, 2013, motion – Lee; second – James, in favor – Bernhardt, Lee, Murray, Murtishaw, James, Schlachter; against – none; absent – Bell, Constantine.

RATIONALE FOR RECOMMENDATION

Studies indicate that making a building's energy performance more transparent has tremendous potential to accelerate energy efficiency. A recent study by researchers at UCLA and Maastricht University in the Netherlands concluded that homes labeled as green or energy efficient sold at a 6% premium in California (Kok and Kahn, 2013). In commercial markets, a growing body of research shows that energy efficient properties have higher occupancy levels, lease-up rates, and sale prices than less efficient properties (Pivo & Fischer, 2010, Fuerst & McAllister 2009/11, Wiley et al., 2010). Furthermore, research by the US EPA found significant energy savings achieved in buildings benchmarking their energy use, finding an average savings of 2.4% per year over a seven-year period.

ALTERNATIVE ACTIONS CONSIDERED

One option considered by the Energy Commission is the "business-as-usual" approach. This approach would entail slight modifications to the current RECO and CECO prescriptive requirements to bring them up to date with the current Title 24 California Energy Code. This approach would not achieve a scale of energy savings that is consistent with the community's goals. A purely prescriptive list of measures precludes opportunities for deeper energy-saving measures in the future and the current compliance triggers do not affect enough properties. Further, basic modifications to the existing prescriptive measures do not address other deficiencies of the current ordinance, including the lack of an energy information disclosure element and out of date information systems to enable user-friendly compliance and tracking.

Another option considered was to go beyond simply disclosing energy information by requiring that businesses and residents achieve measurable improvements in the energy performance of their buildings. This type of requirement would result in more energy savings in the short-term, but similar levels of savings may be achieved through energy information disclosure policies because of their potential to drive market demand for better performing buildings. Further, the cost of compliance would be higher.

CITY MANAGER

The City Manager concurs with the content and recommendations of the Commission's Report.

CONTACT PERSON

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Attachments:

1: Resolution

2: Comparison of US Commercial Building Energy Benchmarking and Disclosure Policies

3: Comparison of US Residential Building Energy Benchmarking and Disclosure Policies

RESOLUTION NO. ##,###-N.S.

RECOMMENDED STRATEGY FOR ENERGY ORDINANCES

WHEREAS, the goal of the Berkeley Climate Action Plan (CAP) is to reduce greenhouse gas (GHG) emissions to 33% below 2000 levels by 2020; and

WHEREAS, building energy use accounts for 45% of the community's carbon footprint; and

WHEREAS, GHG emissions associated with building energy use decreased by 18% since 2000, significant additional reductions are still needed to meet the City's goal; and

WHEREAS, existing Residential and Commercial Energy Conservation Ordinances (RECO and CECO) have served as critical components of Berkeley's energy efficiency policy to date and have helped the community achieve energy use reductions; and

WHEREAS, the current ordinances include measures that are out of date with building science and lag behind the current Title 24 California Energy Code and must be updated in order to more effectively enable increased energy and water efficiency and reduced GHG emissions in existing buildings; and

WHEREAS, studies indicate that making a building's energy performance more transparent has tremendous potential to accelerate energy efficiency by motivating owners to take action on energy performance and providing returns on efficiency investments; and

WHEREAS, other cities and states have established policies to require disclosure of energy performance and assessments of opportunities for improvement; and

WHEREAS, Berkeley's energy ordinance should include energy information disclosure to enable property owners to leverage their investment in energy upgrades in the marketplace and to enable prospective tenants and buyers to assess the energy performance and associated costs of a given building; and

WHEREAS, the ordinance should be consistent with the Title 24 California Energy Code; and

WHEREAS, user-friendly compliance and compliance tracking for residents and businesses should be available through improved information technology systems and on-call assistance; and

WHEREAS compliance costs should be minimized through synergy with ratepayer-funded utility incentive programs such as Energy Upgrade California; and

WHEREAS, the ordinance should be accompanied by increased recognition for residential and commercial energy efficiency leaders within the community through awards and other recognition efforts; and

WHEREAS, the ordinance should improve the ability for City staff to track compliance, direct energy services to underperforming buildings or areas, and to measure and report the energy, cost and GHG reductions associated with the ordinance.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the Council directs staff to initiate a public process to prepare an ordinance for City Council and community consideration to update the City's existing Residential and Commercial Energy Conservation Ordinances.

Attachment 2 - Comparison of U.S. Commercial Building Energy Benchmarking and Disclosure Policies

Jurisdiction		Legislation				Building Type & Size Threshold				Disclosure				Rating System			Additional Elements	
Jurisdiction	Short Name	Enacted	First Compliance Deadline	Municipal	Commercial	Multi family	To Gov't	On Public Website	Time of Transaction	To Current Tenants	Energy Star	Other	Utility Req't	Water Use Tracking	Audit/Improvement Requirement			
Austin	Energy Conservation Audit & Disclosure (ECAD) Ordinance	Nov 2008	June 2011	✓	10K SF+	Audits	✓	-	Buyers	-	✓	ACLARA	-	-	Audits & mandatory upgrades for multifamily buildings			
	Building Energy Reporting and Disclosure Ordinance	May 2013	May 2014	✓	35K SF+	35+ units or 35K SF+	✓	✓	-	-	✓	-	✓	✓	Periodic energy assessments and/or actions			
District of Columbia	Clean and Affordable Energy Act of 2008	July 2008	April 2013	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	Energy Star Target Finder	-	✓	-			
Minneapolis	Chapter 47 190, Commercial Building Rating and Disclosure Ordinance	Jan 2013	May 2014	25K SF+	50K SF+	-	✓	✓	-	-	✓	-	✓	-	-			
New York City	Local Law 84 (additional requirements in LL 87, LL 88)	Dec 2009	August 2011	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	-	✓	✓	ASHRAE level II audits & RCX (LL 87), lighting upgrades & submetering (LL 88)			
Philadelphia	Bill NO. 120428-A	June 2012	October 2013	-	50K SF+	-	✓	✓	Buyers, Lessees	-	✓	-	✓	✓	-			
San Francisco	Existing Commercial Buildings Energy Performance Ord.	Feb 2011	October 2011	10K SF+	10K SF+	-	✓	✓	†Buyers, Lessees, Lenders	✓	✓	-	†	-	ASHRAE level I or II audits or RCX every 5 years			
Seattle	CB 116731	Jan 2010	October 2011	20K SF+	20K SF+	20K SF+	✓	-	†Buyers, Lessees, Lenders	✓	✓	-	✓	-	-			
California	AB 1103	Oct 2007	July 2013	†	5K SF+	-	✓	-	Buyers, Lessees, Lenders	-	✓	-	✓	-	Mandatory upgrades to be developed under AB 758			
Washington State	Efficiency First SB 5854	May 2009	January 2011	10K SF+	10K SF+	-	-	-	Buyers, Lessees, Lenders	-	✓	-	✓	-	Audits for public buildings with low ratings			

† Required by previous action
To access this document online, visit www.imt.org/performance-policy or www.buildingrating.org/content/policy-comparison

Attachment 3 - Comparison of US Residential



Comparison of U.S. Residential Energy Disclosure Policies

	Legislation				Disclosure			Trigger		Building stock
	Jurisdiction	Short name	Enacted	Effective	Efficiency Checklist	Utility Data	Evaluation/ Audit	Sale	Rental	New Homes Only
Cities & Counties	Austin, TX	ECAD Ordinance	2008	2011	-	-	✓	✓	-	-
	Chicago, IL	Ordinance No. SO2013-1645	2013	2013	-	✓	-	✓	✓	-
	Montgomery County, MD	Bill No. 31-07	2008	2008	-	✓	-	✓	-	-
	Santa Fe, NIM	Ordinance No. 2007-38	2007	2008	-	-	✓	✓	-	✓
States	Alaska	AS.34.70.101	2008	2008	-	✓	-	✓	-	-
	Kansas	HB 2036	2007	2007	✓	-	-	✓	-	✓
	Maine	H.P. 1468 - I.D. 2074	2006	2006	✓	-	†	†	✓	-
	Nevada	SB 437	2007	2011	✓	✓	-	✓	-	-
	New York	Truth in Heating Law	1980	1981	-	✓	-	✓	✓	-
	South Dakota	SB 64	2009	2009	✓	-	-	✓	-	✓

† Standards exist for a voluntary program
 To access this document online, visit www.imt.org/performance-policy or www.buildingrating.org/content/policy-comparison
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