



DATE: September 12, 2016
TO: Council Sustainability Committee
FROM: Director of Utilities and Environmental Services

SUBJECT

Energy Performance and Disclosure in Existing Homes and Commercial Buildings

RECOMMENDATION

That the Committee reviews and provides comments and policy direction on this report.

SUMMARY

In order to meet the City's long term greenhouse gas (GHG) emissions reduction goals, energy consumption by existing buildings must be addressed. This report presents the current General Plan programs that call for an Energy Performance and Disclosure (EPAD) ordinance, includes a summary of ordinances adopted by other cities, and some factors for the Committee to consider regarding possible adoption of an ordinance.

BACKGROUND

The City's original Climate Action Plan (CAP), adopted in 2009, included: Action 3.1, a Residential Energy Conservation Ordinance (RECO) for single-family homes; Action 3.2, a RECO for multi-family homes; and Action 3.3, a CECE for commercial buildings. Action 3.1 reads:

Develop and implement a Residential Energy Conservation Ordinance (RECO) for detached single-family homes which would require improved energy efficiency and energy conservation in residential buildings. Update the RECO on a regular basis to ensure buildings become more energy efficient over time. Typical energy efficiency improvements may include updates to the lighting, heating, ventilation, and air conditioning systems and improvements that lead to water conservation.

In 2010 and 2011, staff worked with the Council Sustainability Committee (CSC) to consider a possible RECO. The proposed ordinance would have required energy efficiency improvements in existing single-family and duplex homes. Several public meetings were held in 2010 and 2011 with the CSC and stakeholders. On May 31, 2011, due to concerns about potential costs

to homeowners and on recommendation from the CSC, Council directed staff to stop developing a RECO and to focus on voluntary programs and incentives, and to work with StopWaste to explore the development of an ordinance that may become a model that could be adopted by cities throughout Alameda County.

In 2014, when the current General Plan was adopted, it incorporated the original Climate Action Plan. Actions 3.1, 3.2, and 3.3 from the original CAP became Implementation Programs NR-5 and NR-6 (Residential Energy Performance Assessment and Disclosure Ordinance and Commercial Energy Performance Assessment and Disclosure Ordinance). The original language for these two programs was presented to the CSC on October 2, 2013:

Residential Energy Performance Audit and Disclosure Ordinance. The City shall adopt a Residential Energy Performance Audit and Disclosure (EPAD) Ordinance for detached single-family homes and multi-family homes. The EPAD Ordinance shall require energy performance disclosures at determined trigger points or thresholds and improved energy efficiency and energy conservation in residential buildings. The EPAD's required efficiency improvements shall be those that are determined to be affordable and cost-effective.

Commercial Energy Performance Audit and Disclosure Ordinance. The City shall adopt a Commercial Energy Performance Audit and Disclosure (CPAD) Ordinance for detached single-family homes and multi-family homes. The CPAD Ordinance shall require energy performance disclosures at determined trigger points or thresholds and improved energy efficiency and energy conservation in commercial buildings. The CPAD's required efficiency improvements shall be those that are determined to be affordable and cost-effective.

The CSC expressed concerns about making disclosure mandatory and suggested that disclosure should be voluntary. The minutes from the October 2, 2013 CSC meeting are included as Attachment II. On October 22, 2013, draft policies and programs for the General Plan were presented to Council. The EPAD programs were revised as follows:

Residential Energy Performance Audit and Disclosure Ordinance. The City shall adopt a Residential Energy Performance Audit and Disclosure (EPAD-R) Ordinance for detached single-family homes and multi-family homes. The Residential EPAD Ordinance shall require energy performance disclosures at determined trigger points or thresholds. After disclosure requirements are in effect for at least two to three years, the City may consider requirements for cost-effective and improved improvements in energy efficiency and energy conservation in residential buildings. ~~The EPAD's required efficiency improvements shall be those that are determined to be affordable and cost-effective.~~

Commercial Energy Performance Audit and Disclosure Ordinance. The City shall adopt a Commercial Energy Performance Audit and Disclosure (EPAD-C) Ordinance for ~~detached single-family homes and multi-family homes~~ commercial buildings. The Commercial EPAD Ordinance shall require energy performance disclosures at determined trigger points or thresholds. After disclosure requirements are in effect for at least two to three years, the City may consider requirements for cost-effective and improved improvements in energy efficiency and energy conservation in commercial buildings. ~~The CPAD's required efficiency improvements shall be those that are determined to be affordable and cost-effective.~~

Council expressed reservations about the possibility of requiring improvements (see Attachment III for meeting minutes). In response, staff further revised each of the programs. The final text of each General Plan program is as follows:

NR-5 – Residential Energy Performance Assessment and Disclosure Ordinance. Not sooner than 2017, the City shall consider adopting a Residential Energy Performance Assessment and Disclosure (EPAD-R) Ordinance for detached single-family homes and multi-family homes. The EPAD-R Ordinance may include the following:

- energy performance disclosures at certain points or thresholds
- use of a free online tool such as the Environmental Protection Agency’s Home Energy Yardstick for self-assessment, which takes into account the size of the home and number of occupants
- alternatively, use of a low-cost assessment tool such as the Department of Energy’s Home Energy Score
- flexible exemption provisions including:
 - the age of the building,
 - foreclosures or short sales,
 - recent energy efficiency upgrades,
 - an owner providing twelve consecutive monthly utility bills from the previous two years

NR-6 – Commercial Energy Performance Assessment and Disclosure Ordinance. The City shall consider adopting a Commercial Energy Performance Assessment and Disclosure (EPAD-C) Ordinance for commercial buildings. The EPAD-C Ordinance may include the following:

- Energy use disclosure requirements consistent with State law (AB 1103), which requires use of the ENERGY STAR Portfolio Manager benchmarking tool.
- Exemption provisions consistent with AB 1103, which include:
 - the size of the building
 - the occupancy type of the building

DISCUSSION

Requiring disclosure of the energy efficiency of a building can be an incentive for owners to install energy efficiency improvements. Energy efficient lighting and appliances and occupant behavior can reduce utility bills for owners and renters. Property owners have an incentive to invest in and market the energy efficiency of their buildings. Likewise, energy information disclosure helps prospective tenants and buyers to compare energy performance across buildings. For example, the efficiency of major appliances or systems is sometimes included in marketing information. In addition, energy information disclosure policies enable local government and utilities to direct resources and assistance to help improve energy performance. Disclosure requirements also create an opportunity to teach owners how to access financing & incentive opportunities.

Residential – Hayward currently has approximately 49,000 dwelling units. Of that total, approximately 85% were built before 1990. By 2040, Hayward is expected to have approximately 58,000 housing units and percentage of pre-1990 homes will still be substantial – approximately 65%. While the homes built today are subject to high energy efficiency standards and, starting in 2020, new homes will be zero net energy, we need to find ways to reduce the energy consumption and emissions associated with existing homes.

While a RECO typically would have required energy efficiency improvements to be installed in existing buildings, several cities are now adopting ordinances that simply require disclosure of energy use and ratings that describe the efficiency of buildings. The most accepted tool for generating a performance score of a single-family home or a townhouse is the Department of Energy's Home Energy Score (HES). Preparation of a HES report requires an inspection by a certified rater and results in a one to ten score, which is calculated using forty different data points including information about the home's envelope, heating, cooling and hot water systems. Information about how residents operate the house and non-permanent features like lighting, home electronics and appliances are not included in the calculation. Finally, a HES report includes customized recommendations for improving the efficiency of the home. A sample report is included as Attachment III to this report. The HES rating is relatively simple and typically costs \$200 to \$300.

There are other rating tools available, such as the Home Energy Rating System (HERS II), which scores a home's energy use based on a standardized scale called the HERS index, and GreenPoint Rated for Existing Homes, which scores a home's environmental impacts in five categories: community, energy, indoor air quality/health, resources and water. However, both HERS II and the Green Point Rated ratings are complex, time consuming, and expensive, making them problematic for local government to mandate for single family homes.

The DOE's Home Energy Yardstick, mentioned in NR-5, is a free online tool that can be completed without special training. To calculate a Home Energy Yardstick score, only five inputs are necessary:

1. ZIP code;
2. Square footage of the home;
3. Number of full time home occupants;
4. A list of all the different fuels used in the home (e.g., electricity, natural gas, fuel oil);
and
5. Last twelve-months of utility bills.

Some cities promote the use of the Home Energy Yardstick, but staff is not aware of any cities that require use of the tool. While the HES evaluation considers the home and its physical characteristics and not occupant behavior, the Home Energy Yardstick relies more on bill information, which varies depending on occupant behavior.

StopWaste, with support from the Bay Area Regional Energy Network (BayREN), formed a READ (Residential Energy Assessment Disclosure) working group and released a white paper about READ/RECO ordinances. StopWaste developed a standardized HES assessment tool and program protocols. StopWaste also developed the standard “Custom Recommendation Form” that is included at the end of each HES report, which is aligned with the Energy Upgrade California program and identifies rebate and financing opportunities. Information for both consumers and assessors is available [here](#).

StopWaste provides registration and training services for Assessors for the nine-county Bay Area. To become a Qualified Home Energy Score Assessor, individuals must:

1. View an online recorded webinar
2. Complete a Home Energy Score Assessor Agreement
3. Possess required insurance
4. Possess a building-related credential from a qualified organization such as the American Society of Home Inspectors (ASHI) or the California Real Estate Inspector Association
5. Complete the Free Two-Part Online Training and Testing

In all cities except Berkeley, Assessors may receive a \$300 rebate for their first home scored and \$150 for each subsequent home scored. In the City of Berkeley, the homeowner currently receives a \$200 rebate.

The City of Berkeley has had a RECO and a CECO since 1987 and 1994 respectively. Berkeley’s original RECO had a list of prescriptive measures, but over time, the ordinance became outdated with respect to current energy code requirements and incentives available for efficiency improvements. Also, because every home is different, a one-size-fits-all approach is not the best way to maximize energy efficiency. In 2015, the RECO and CECO were replaced with the Berkeley Energy Saving Ordinance (BESO). For single-family homes, the BESO requires submittal of a HES energy report at time of sale. The required report can be deferred for twelve months and there are several exemptions including low energy users and financial hardship. Following are some key points about Berkeley’s BESO:

- The requirement for an energy assessment is the responsibility of the owner. This allows the cost and timing to be negotiated between buyer and seller.
- About half of homes apply for twelve-month deferral. This allows the sale to proceed on schedule.
- Berkeley is encouraging assessors to bundle the energy report service into the general inspection service. Adding a HES evaluation to a general inspection can increase inspection time by about thirty-minutes, but can avoid the need for the owner to schedule a separate inspection appointment.
- As of July 8, 2016, 285 HES evaluations had been completed.

- There are currently six companies registered as Home Energy Assessors for single-family homes in the Bay Area and they are all located in northern Alameda County. There are currently eight companies registered as Commercial, Multifamily & Mixed Use Building Energy Assessors.
- Violations of the BESO are subject to an administrative citation.
- More information about Berkeley's BESO is available [here](#).

The City of Piedmont is currently considering a BESO similar to Berkeley's. Piedmont's City Council expressed initial support for the ordinance in May 2014. On June 13, 2016, Piedmont's Planning Commission voted 3-2 recommending that the Piedmont City Council not approve the BESO. The Planning Commission's decision was based, in part, on the results of a community survey showing that of the 409 unique responses, 293 (72%) were against any form of energy assessment requirement. The possible BESO is expected to be presented to Piedmont's City Council in early September.

The City of Albany is also considering a BESO similar to Berkeley's; however Albany's Sustainability Committee has expressed concern about the potential administrative burden associated with managing the ordinance and tracking compliance. A possible BESO may be presented to Albany's Council this fall.

The cities of Brisbane and Menlo Park, and San Mateo County are also in various stages of exploring adoption of RECOs and BESOs

The City of Chico adopted a RECO in 1991 and amended it in 2010. The ordinance requires property owners to implement certain energy and water conservation measures upon the resale of residential (single and multi-family) properties. Regardless of resale, properties are required to be re-inspected once every ten years. A minimum R-30 ceiling insulation must be installed regardless of cost and if the cost of the required insulation is under \$800, additional measures are required until \$800 is reached. Chico's RECO webpage is available [here](#).

The City of Boulder, Colorado has an ordinance (SmartRegs) that requires all rental housing to undergo an energy audit. Depending on the results of the audit, the owner may be required to install efficiency upgrades. Boulder's SmartRegs program is available [here](#).

There are many other jurisdictions in the United States and around the world with building rating programs. A complete list is available at <http://www.buildingrating.org/jurisdictions>

Commercial – Several cities are requiring benchmarking for large commercial buildings. Benchmarking usually refers to the use of ENERGY STAR Portfolio Manager®, an online tool created by the Environmental Protection Agency. The tool provides a 1 to 100 score based on twelve months of utility data and some key building characteristics. The cities of San Francisco and Berkeley in California, and Austin, Boston, Cambridge, District of Columbia, Minneapolis, New York, Philadelphia, Seattle, and Boulder are requiring benchmarking for commercial buildings. San Francisco currently requires all non-residential buildings larger

than 10,000 square feet to be benchmarked using Energy Star Portfolio Manager and owners are required to submit annual reports by April 1 of each year for the previous calendar year.

California's AB 1103 became law in 2007 and was to require energy benchmarking in commercial buildings statewide, but the implementation rules were postponed several times. One reason the rules were delayed was that commercial building owners have not been able to require their tenants to provide utility bill information due to privacy requirements. AB 1103 was superseded by AB 802 in October 2015. Regulations for AB 802 are expected in early 2017. AB 802 applies to both commercial and multifamily buildings and requires utilities to provide building-level data to owners upon request. AB 1103 required building energy use disclosure for the sale, lease, finance, or refinance of certain non-residential buildings, but was repealed effective January 1, 2016. There is no statewide energy use disclosure requirement in 2016.

Berkeley will phase in requirements for annual Energy Star performance reports for buildings 25,000 square feet or larger beginning in 2018. For buildings less than 25,000 square feet, owners will be required to provide an energy assessment report prepared by a registered energy assessor every ten years starting in 2020.

Challenges

Challenges may include community acceptance of a mandatory disclosure requirement. Real estate professionals and commercial property managers may object to the additional paperwork necessary to comply with an ordinance. Staff reached out to the Bay East Association of Realtors, whose representative noted that they would oppose any requirements that are tied to point of sale. Finally, while there are currently rebates in place to offset the cost of preparing a HES, these rebates may not be available in the future.

Administration of an EPAD ordinance would require substantial staff resources. The City of Berkeley currently has one full time equivalent (FTE) employee managing the BESO and tracking compliance. If Hayward were to adopt an EPAD ordinance, adding one FTE would not completely address the fiscal impact to the City. Involvement from other existing staff would also be required. Also, staff would need to work with local energy and inspection professionals to get more local certified Assessors.

Questions for the Committee:

- Should staff pursue development of an EPAD ordinance?
- Should the ordinance focus on residential or commercial properties first?
- Should this item be discussed at a future Council work session?
- Other policy direction?

ECONOMIC IMPACT

Greater awareness of energy consumption and efficiency can lead to installation of energy efficiency improvements and behavior changes that reduce energy use. Residents and building managers can enjoy utility bill savings and increased property values. Installation of

energy efficiency improvements can also lead to job creation for local contractors. In a [report](#) titled *What is Green Worth? Unveiling High-Performance Home Premiums in Washington, D.C.*, researchers found that green homes fetched a mean price premium of 3.46%. An EPAD program could help Hayward achieve its goal for every household and business to reduce their energy consumption by 10% by 2020 (General Plan program NR-7).

As noted in a fact sheet by the Institute for Market Transformation (Attachment IV), benchmarked buildings across the United States reduced energy consumption an average of 2.4% annually over three years. Over the same time period, the buildings benchmarked in Washington D.C. reduced energy use by 9% on average.

FISCAL IMPACT

If Hayward adopts an ordinance requiring reporting of energy scores, the administrative burden could be substantial. Since Berkeley's adoption of its BESO in 2015, the city has had approximately one full time equivalent position managing the receipt and tracking of data. Before Hayward adopts an ordinance, staff would first determine more specifically the resources that would be needed to manage the program.

SUSTAINABILITY FEATURES

EPAD ordinances would be consistent with General Plan policy NR-2.4, Community Greenhouse Gas Reduction, which states,

The City shall work with the community to reduce community-based GHG emissions by 20 percent below 2005 baseline levels by 2020, and strive to reduce community emissions by 61.7 percent and 82.5 percent by 2040 and 2050, respectively.

An EPAD ordinance would also be directly in line with General Plan policy NR 4.13, Energy Use Data, which states,

The City shall consider requiring disclosure of energy use and/or an energy rating for single family homes, multifamily properties, and commercial buildings at certain points or thresholds. The City shall encourage residents to voluntarily share their energy use data and/or ratings with the City as part of collaborative efficiency efforts.

In addition, an EPAD program would likely have the following sustainability features or benefits:

Energy – A primary goal of energy use and efficiency disclosure is to reduce energy consumption – especially for those energy sources that depend on fossil fuels.

Water – While the HES tool does not take into account water use, the EPA's Portfolio Manager can be used to track water consumption.

Air – Installation of energy efficiency improvements will typically result in reduced emissions associated with electricity and natural gas. Furthermore, participation in the Energy Upgrade California program requires a combustion appliance safety test to check for carbon monoxide and natural gas leaks and can include air sealing to improve indoor air quality.

PUBLIC CONTACT

All Committee meetings are public for which public notices are posted. Staff has shared this report with real estate professionals including the Bay East Association of Realtors. Staff has not yet directly engaged with the community. If directed to pursue adoption of an ordinance, staff will engage with the community, including professional stakeholders, to gather input.

NEXT STEPS

If recommended by the Committee, staff can present a work session item to Council in early 2017. Staff would first meet with staff and members of the Bay East Association of Realtors and the Hayward Chamber of Commerce to gather input regarding a possible ordinance. Upon direction from Council, staff will conduct a comprehensive outreach campaign prior to and during preparation of an ordinance.

Prepared by: Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Utilities and Environmental Services

Approved by:



Kelly McAdoo, City Manager