

# California's Comprehensive Law on Energy Efficiency in Existing Buildings: Leading the Way

*Gina Goodhill and Mary Luevano, Global Green USA*

## ABSTRACT

California is in the process of implementing a groundbreaking law that requires *all* existing buildings that fall significantly below Title 24<sup>1</sup> to improve their efficiency. This first-of-its-kind legislation has the potential to dramatically reduce the amount of energy and electricity that buildings consume, and could be a model for the rest of the country. More than half of California's 13 million residential buildings and over 40% of commercial structures were built before the implementation of Title 24 in 1978. According to the California Energy Commission's (CEC) "cost effective" estimates, the new law could reduce projected electricity use by 9% and projected natural gas use by 6% in California, which translates to \$4.5 billion dollars in consumer savings.

This paper outlines the strategy used to pass this law and offers advice for other interested cities and states; provides the best available information on how this law will work; and highlights some of the opportunities and obstacles in implementation. Global Green USA was the lead sponsor of this legislation when it passed into law in 2009. We have worked closely with the CEC and with relevant stakeholders to ensure that it will be implemented in a way that supports transparency and inclusiveness, and that results in real energy savings.

## Introduction

Assembly Bill 758, now known as the Comprehensive Energy Efficiency in Existing Buildings Law, required the California Energy Commission (CEC) to develop and implement a comprehensive program to achieve cost-effective energy savings in the state's existing residential and nonresidential building stock that fall significantly below the efficiency required by the current version of Title 24. The law also requires the California Public Utilities Commission (CPUC) to investigate the ability of each electrical and gas corporation to provide various energy efficiency financing options to their customers for the purposes of implementing the program. AB 758 was authored by Assemblywoman Nancy Skinner,<sup>2</sup> and the law has the potential to create a never-before-seen level of electricity, gas, and economic savings.

This presentation will focus on how AB 758 was created, how the new law is being implemented, and how it has the potential to be a "game changer" for energy efficiency policy across the United States and the rest of the world.

## Background

California has the eighth largest economy in the world (Lifsher 2012); what happens in California is felt throughout the rest of the country and often the world. In 2008, California

---

<sup>1</sup> California's model energy code. While commonly referred to as Title 24, it is specifically Title 24, Part 6.

<sup>2</sup> Assemblywoman Skinner is a registered Democrat and represents Berkeley, CA.

accounted for 12.8 percent of the U.S. gross domestic product (\$1.8 trillion out of \$14.44 trillion). The state's population exceeded 37 million as of 2009, according to the U.S. Census Bureau. Californians represented 12% of the United States population - one out of every eight persons (BoC 2012).

California is well-known for its progressive environmental and clean energy policies, especially around energy efficiency. In 1978, California enacted Title 24 Part 6, which created energy efficiency standards for new construction. As a result, California has avoided the need to build over 3,000 MW of new electricity generating capacity or about 6 medium sized power plants, reducing California's energy bills and improving the state's economy and environment. Now, as the building stock has changed out with each year's addition of more efficient, newly constructed homes, over 40% of California's housing stock is more efficient than it was 30 years ago (CEC 2010, 4).

However, 55% of California's 13 million residential units and just over 40% of California's nonresidential buildings were built prior to any building energy efficiency standards. In a very high percentage of California's existing buildings, substantial efficiency improvements are feasible and cost effective. Major energy savings and the societal benefits that accompany those savings could be achieved through a comprehensive energy efficiency program for existing residential and nonresidential buildings. These savings are extremely important to California's economy and environment, particularly due to the air quality and water resource impacts of power plants and the energy bill impacts of unnecessary electricity and natural gas use, and they are crucial to California's efforts to mitigate climate change through greenhouse gas emission reductions.

## **National Perspective**

California is not the first state to attempt to increase efficiency in its existing building stock, and it is worth reviewing policies that have passed in other states to address this problem. ACEEE annually ranks all states from most efficient to least efficient, analyzing their entire efficiency approach. The top states deserve mention (California is ranked number two):

- Massachusetts – Ranked number one, Massachusetts Green Communities Act of 2008 established energy efficiency as the state's "first priority resource" and created an advisory council that works with utilities to develop statewide plans in three- year cycles. The three -year plan in operation is the most aggressive target in the country, and is expected to lead to an investment of \$2.2 billion in energy efficiency between 2010-2012. In 2010, the first implementation year, the utility driven energy efficiency plans saved an equivalent to the annual electricity usage of almost 85,000 households and the equivalent to the annual natural gas usage of nearly 14,000 households; produced greenhouse gas emissions reductions equal to eliminating more than 74,000 cars; and grew jobs at a rate of 6.7% from July 2010 through July 2011 (Patrick 2011).
- New York – Ranked number three, New York's "Greener, Greater Buildings Plan" was enacted in 2009 through a series of four bills aimed at improving the energy efficiency of existing buildings. The bills address energy conservation standards for building renovations; annual energy benchmarking and disclosure; mandatory lighting system upgrades and tenant sub-metering; and mandatory energy auditing, retro-commissioning, and retrofits. In total, the bills require that renovations to existing buildings trigger

energy upgrades that meet minimum energy conservation standards; require energy and water use benchmarking; require energy audits and retro-commissioning; and require upgraded lighting systems for buildings (New York). All these requirements apply only to buildings over a certain size. This plan will result in a 5% emissions reduction and will save \$700 million annually by 2030 (PlanNYC).

While impressive, none of these programs tackle existing buildings in as comprehensive a way as California's AB 758, which is the only program that targets *all* existing buildings in the *entire* state. It must be noted though that while this may be unique in America, a preliminary search of international programs show that countries such as Germany and Denmark have similar goals. Most notably is Denmark's policy to achieve a 25% savings in the existing building stock, and Germany's 2009 law to increase efficiency performance for new and existing buildings in all sectors by 30% (RAP 2010).

## **California's Existing and Complementary Energy Efficiency Goals**

AB 758 complements many of the state's existing energy goals. The following policies have shaped California's energy efficiency vision and have helped herald in AB 758.

*Loading Order:* In 2003, the Energy Commission, California Public Utilities Commission and the California Power Authority adopted the first California Energy Action Plan. These agencies, along with Governor Schwarzenegger, established the "loading order" that prescribes the priority sequence for actions to address California's energy needs. The loading order identifies energy efficiency and demand response as the State's preferred means of meeting growing demand because it is the cheapest, most reliable, and most environmentally-sensitive resource, and minimizes our contribution to climate change.

*Assembly Bill (AB) 32:* In 2006, the Legislature and Governor Schwarzenegger enacted AB 32, capping California's greenhouse gas emissions at the 1990 level by 2020. AB 32 placed reducing greenhouse gas emissions at the center of the State's agenda. The Air Resources Board's AB 32 Scoping Plan identifies energy use in buildings as the second largest contributor to California's greenhouse gas emissions after transportation. The Scoping Plan calls for aggressive action for existing buildings, including establishment and mandatory disclosure of performance ratings for buildings, efficiency improvement requirements for under-performing buildings, and creative financing options, such as on-bill financing.

*Integrated Energy Policy Report:* In 2007, the CEC released its bi-annual Integrated Energy Action Plan (IEPR), which placed principal concern on efforts to reduce energy use. It listed climate change and the need to reduce greenhouse gasses as the most important issue of the century, and recommended 100 percent achievement of all cost-effective energy efficiency measures in California. A 2011 version of the report further strengthened these goals.

*The Strategic Plan:* In 2008, as a result of the IEPR, the CPUC adopted California's first Long Term Energy Efficiency Strategic plan, which presents a single plan to achieve energy efficiency savings in an integrated way. The plan also supported residential efficiency efforts focused on a whole house approach rather than on individual measures. At the same time, the CEC adopted regulations to support whole-house home energy ratings and energy audits for existing buildings.

*AB 1103*: In 2007, AB 1103<sup>3</sup> passed into law and required nonresidential building owners to disclose benchmarking data and ratings to prospective buyers, leasers, or lenders. The CEC is in the process of finalizing regulations to carry out this legislation, and to ensure its integration with AB 758.

*RECOs*: Residential Energy Conservation Ordinances (RECOs) require existing buildings to meet minimum energy efficiency standards that go beyond state law. Cities can adopt a RECO and promote an energy efficiency standard that is stronger than the state or county law. Over 40 cities in California have adopted a RECO, though a few apply only to new construction. While the policy under these RECO's vary, they have been incredibly effective at helping to "push the envelope" beyond what's required. Berkeley's RECO alone, which requires energy upgrades at time of sale and major renovation, has saved an estimated 811,800 therms of natural gas and 1.32 MWh of electricity over its 22 years (ACEEE 2011).

## **Existing EE Programs: Strengths/Weaknesses**

Clearly, California has a litany of policies dedicated to energy efficiency in existing buildings. However these ambitious policies have not always led to the most successful programs. The existing building stock is nowhere as efficient as it could be. A perfect example of this discrepancy can be seen in the multifamily, affordable housing sector.

Renters represent 42% of California households and approximately one-third – 4 million – of these households qualify for low-income energy efficiency programs. Lower income households have been shown to use 27% more energy per square foot compared to market rate buildings due to their age and condition. Current energy efficiency programs suffer from the following limitations:

1. A lack of coordination and standardization between programs - Currently, multifamily rental building owners have to navigate myriad programs (e.g. ARRA WAP, CPUC's ESAP, rebates, etc.), many with differing requirements and standards. Not only do these differences create confusion, but varying standards also hamper workforce development by narrowing the pool of professionals who are considered qualified to work on a particular project.
2. Financing - Financing and investment standards do not recognize the unique needs of this community. The structure for accessing financing and incentives for multifamily buildings is fundamentally more complex than for single-family buildings. These differences include: projects require more money than single family projects, and securing this funding can take several years; permitting and regulations are more complex; taking on additional debt is difficult if not prohibited for these properties; there is a split incentive between tenants and building owners; and many federal and state financing programs such as Savings-to-Investment Ratio tend to favor cost-effectiveness over energy savings (Shwartz et al. 2011).

Creating a brand new, comprehensive program under AB 758 is an opportunity to analyze what is not working and fix it.

---

<sup>3</sup> Assemblywoman Lori Saldana authored the legislation. She was a registered Democrat representing San Diego.

## **Initial Concept/ Reason for Legislation**

California's energy code for new construction has saved Californians more than \$61 billion and reduced more than 250 million metric tons of greenhouse gas emissions, the equivalent of taking 37 million cars off the road (CEC 2012).

AB 758 was created to achieve a similar savings in existing buildings, and was first proposed in a 2008 bill. The 2008 version of the bill listed specific strategies for achieving efficiency gains including, the use of "time of sale" as a trigger mechanism for actions related to energy efficiency, which was opposed by industry groups. Therefore, the 2009 version of the bill was much broader, replacing the prescriptive approach and instead providing authority to the CEC to design and implement the specifics. The bill did not specify exact goals, timelines, or tactics, and was successfully adopted in 2009.

The drawback of using such vague language is that the development of regulations by the CEC is a long, arduous task fraught with politics. Designing and implementing this program will be a multi-year process. In addition, this approach only worked because California's regulatory agency (the CEC) has a history of commitment to increased energy efficiency. It would not have worked if the regulatory agency in charge did not have goals that were consistent with aims of the legislation.

Global Green USA worked as the lead sponsor of the legislation, and was able to use its technical expertise and "on the ground" experience to successfully educate various stakeholders and legislators about the important of energy efficiency retrofits. Our involvement has extended far beyond the bill's passage, as we have led efforts to coordinate all key stakeholders (environmental, building industry, real estate, labor, etc) and act as an informal liaison between these groups and the CEC to enhance the sharing of information and to support the implementation process. We produce regular electronic updates for key stakeholders, and have worked hard to ensure that all points of view are heard by the CEC.

## **Obstacles/Opportunities in Implementation**

The most critical opportunity *and* obstacle will be creating a program that not only takes the current economic climate into account, but that is also cost-effective in the long term. The CEC has yet to define "cost-effective" under this program or to identify the types of upgrades that will be considered cost-effective, and the final definition will probably result from input among multiple stakeholders. However it cannot be overstated that this decision may singularly determine the program's success or failure.

### **Obstacles**

*National and State Financial Crises:* AB 758 passed in October 2009, right as California began to feel the brunt of both the national financial crisis that began in 2008, in addition to a severe statewide budget deficit. The legislature continuously failed to pass a state budget, and state workers were required to take monthly furlough days to save money. When Governor Brown entered office in late 2010, he issued a hiring freeze across state government in an attempt to curtail spending. This prevented the CEC from hiring any staff, despite the fact that 9.5 positions were guaranteed under AB 758. As a result, the CEC was not able to fully staff the AB 758 positions until February 2012.

*ARRA*: In February 2009, the President signed the American Recovery and Reinvestment Act (ARRA), which provided \$3.1 billion nationally for the State Energy Program. In May 2009 the CEC was allocated \$110 million of this to address state and regional policies including aggressive greenhouse gas emission reduction and building energy use reduction goals. This money was both a blessing and a curse. While this money helped the CEC pilot and explore energy efficiency programs that may be key components of AB 758, it also forced the CEC to take on a tremendous amount of additional work for which they had not initially planned.

*Special Interests*: As with most statewide programs, various interest groups took immediate measures to ensure that their priorities would be considered before the program was implemented. Two issues in particular are worth noting:

- **Trigger Points**: One of the key issues that the CEC will have to decide is what will activate voluntary and mandatory upgrades and the timing of those. One idea is to take advantage of existing, catalyzing moments in time during which a property owner is already taking action, and use these to “trigger” an energy efficiency action. A frequently recognized and used trigger point is the time of property sale, though others include time of renovation, time of energy rate increase, time of loan re-financing (usually applied to commercial or multifamily buildings), and others. Deciding which triggers to use, and what will happen at these trigger points, continues to be a sticking point for many stakeholders.
- **Energy Modeling and Rating Systems**: One of the clearly specified goals under AB 758 is the development and ongoing refinement of building energy assessment tools, such as Home Energy Rating System (HERS) and Building Energy Asset Rating (BEARS). Deciding what these rating tools will look like, and whether HERS and BEARS will be used as opposed to an alternative system such as the EU’s rating system, has been an ongoing discussion that has attracted a varied set of interest groups.

## **Opportunities**

**Complementary programs.** As previously mentioned, California’s long history of complementary policies helped to buttress the goals set forth in AB 758. In 2010, Governor Jerry Brown took office and released his Clean Energy Jobs Plan, which called for all new residential construction to be zero net energy by 2020, and by 2030 for all new commercial construction. And the 2011 IEPR report once again solidified the CEC’s commitment to achieving a statewide energy efficiency program.

**Changing business models.** The nation’s economic struggles were closely tied to a foreclosure crisis and a housing collapse that is far from over. In California, jobs in construction fell 30% as a result of the recession (Zabin 2011). According to the California Building Industry Association, 2011 was the third-lowest year on record for California housing production. State and national leaders responded to the crisis by investing money in workforce development for energy efficiency upgrades –the US HOME STAR program or “cash for caulkers” was designed to put 168,000 people to work through residential retrofits. Many in the housing industry also responded by switching their business models away from new construction and towards retrofits and remodels to existing buildings. This created an increase of qualified workers and businesses that supported the goals of AB 758 and saw its potential as a job creator in an otherwise difficult

housing market. Estimates show that jobs for retrofitting specialists are expected to grow 58% in 2011 from 2008, and jobs for energy auditors and home energy raters are expected to grow 49% in that same time (DOE 2009).

**Strong self-identification.** Californians have long identified their state as the leader in environmental progress, a point that was only strengthened in the years after the passage of the bill. In the 2010 elections, California overwhelmingly bucked the national trend and voted in favor of pro-environment issues. Most significantly, Californians overwhelmingly voted (62%) against Proposition 23, which would have overturned AB 32. This show of support for California's global warming law at a time when many other states associated strong environmental policy with weak economic policy, further strengthened the resolve of California leaders to pursue environmental goals like AB 758.

## **The AB 758 Program**

### **Policy Aspects**

In creating the framework, the CEC identified several policy considerations that would shape the goals and structure of the program developed under AB 758.

1. **Increased Energy Savings:** First and foremost, this program must achieve energy savings in the state's building stock. Specifically, the CEC is concerned with the amount of annual and peak energy savings, greenhouse gas emission reductions, and projected customer utility bill savings that will accrue from the program.
2. **Increased Emission Reductions:** Similarly, the program must reduce greenhouse gas emissions. In a 2005 report, the CEC estimated that retrofitting all buildings in a cost effective manner could reduce projected electricity use by 9% and projected natural gas use by 6% (CEC 2005, 14). This minimum estimation translates to an emission reduction of about 16,900,000 MTCO<sub>2e</sub>, the equivalent of removing 3 million cars from the road.
3. **Clear Economic Benefits:** The program should strive to minimize the overall costs of establishing and implementing the comprehensive energy efficiency program requirements. The most cost-effective means and reasonable timeframes to achieve the goals of the program should be used, and energy improvements should not have an undue economic impact on California businesses.
4. **Marketing and Education that Reaches Most Californians:** The public should understand the need for, benefits of, and environmental impacts of, the comprehensive energy efficiency program.
5. **Structured Financing:** The program must include financing and various incentives. These could include loans, grants, and rebates, and financing options like on-bill financing, contractual property tax assessments, home warranties and more. The CEC's cost-effective estimates mentioned in bullet point two would result in \$4.5 billion saving to ratepayers (CEC 2005, 14). Research from the NRDC finds that every \$1 invested in energy efficiency improvements nets approximately \$2 in benefits (Martinez, Wang & Chou 2010); we can therefore infer that achieving a \$4.5 billion savings would require a

- \$2.25 billion investment<sup>4</sup>. However, this investment is purely speculative.
6. Development of an Accurate, Effective Energy Rating System: The program must determine and develop the appropriate energy rating systems for residential and nonresidential buildings.
  7. Support A Qualified Workforce: The program must coordinate with the California Workforce Investment Board, the Employment Training Panel, the California Community Colleges, and other entities to ensure a qualified, well-trained workforce is available to implement the program requirements;
  8. Comprehensive Administration: Both utility and nonutility avenues must be explored.

### **Programmatic Aspects**

The AB 758 program is envisioned to develop over three distinct and overlapping phases. In developing and implementing the program, the Energy Commission will coordinate with the California Public Utilities Commission (CPUC), and will consult with representatives of local governments, the construction, utility, finance, real estate, workforce development, small business and other industries.

- Phase One: Infrastructure Development and Implementation Plan (2010-2012)  
This phase will include the development of the infrastructure that will be needed to develop and advance the tools, protocols, and workforce to conduct best practice building energy assessments and retrofits. Program piloting will occur during this phase, with a combination of federal American Recover and Reinvestment Act (ARRA) funds, and public and private funds. The AB 758 Implementation Plan will also be developed during Phase 1. The Energy Commission will incorporate lessons learned from the ARRA pilots; will design a needs assessment study; and will hold public workshops to solicit public input into and inform the scope of the Implementation Plan, which will guide the development of the AB 758 program.
- Phase Two: Market Development and Partnerships (2012 - 2014)  
ARRA funded workforce development, financing programs and some energy retrofit programs are expected to sustain past the ARRA funding period into Phase Two. This phase will include development of the energy efficiency assessments and audits, ratings and building labeling, retrofits and building commissioning markets, and continued growth of the clean energy workforce. Energy efficiency financing products will continue to be developed, and residential and multi-family building ratings and labeling protocols and regulations will be developed. Market development will only succeed with continued and further development of partnerships with public, private and industry partners.
- Phase Three: Statewide Ratings and Upgrades Requirements (2014 - 2015)  
Building energy use disclosure regulations, and whole house retrofits regulations will be developed and implemented during this phase. The Energy Commission will face the major challenge, after the ARRA program termination date, of building the most

---

<sup>4</sup> For comparison's sake, the IOU's spent \$2 billion on energy efficiency in their 2006-2008 funding portfolio.



successful aspects of these programs into the AB 758 regulations. The Energy Commission will solicit public input throughout the regulatory process via publicly noticed workshops, meetings and other activities. Following the regulatory process, the Energy Commission will periodically update the program and adopt revisions that in its judgment will improve or refine the program over time.

The CEC and CPUC are currently in stage one, with workshops tentatively scheduled for spring 2012. One of the first programmatic decisions that the CEC made was to break the program into two programs: one program for residential buildings and one for nonresidential buildings. However, some of the current program areas currently in process can apply to all buildings. Below are two such programs.

### **Energy Upgrade California**

Energy Upgrade California, a web portal, was one of the first programs that the CEC embarked on as a pilot for AB 758. This was a collaborative effort among CEC, CPUC, utilities, local governments, non-governmental organizations and the private sector to establish a “one-stop clearinghouse” for energy efficiency information, incentives and rebates and training for contractors and building professionals. Each county has its own page that highlights the services and energy efficiency opportunities available for local residents. Property owners can enter their zip code or county name to learn about local incentives, financing options and participating contractors. More than \$1.2 billion from a variety of funding sources will be leveraged through Energy Upgrade California (\$33 million of which came from ARRA). \$4.3 million is intended for CAEATFA (California Alternative Energy and Advanced Transportation Financing Authority) to develop financing products for lenders that would make loans available through Energy Upgrade California (CEC 2011).

Energy Upgrade California sought to explore several components of AB 758, including:

- Public Awareness and Outreach – This includes the creation of a “one-stop shop” format, in order to simplify the process and further engage potential consumers
- Workforce Development
- Financing Options and Financial Incentives (Rebates)
- Energy Performance Ratings and Disclosure
- Efficiency Recommendations and Improvements (including Quality Assurance)

As of August 2011, the program had completed 1,615 energy upgrades, achieving an average efficiency increase of 28%.

Energy Upgrade California has room to improve however. Some potential users commented that the overall marketing was weak and largely unsuccessful. In addition, while the program was advertised as statewide, the initial launch was really designed for single family, and did not work for multi-family housing. Others noted that the program’s quick conception did not leave time to ensure that Energy Upgrade coordinated with other statewide programs, and lacked transparency (Schwartz et al. 2011).

## CPUC Financing Research

AB 758 directs the CPUC to work with the CEC in developing and implementing the program. Specifically, this entails conducting a proceeding to investigate the ability of utilities to provide energy efficiency financing options to their customers.

In response to this directive, the CPUC released a consultant report “*Energy Efficiency Financing in California – Needs and Gaps – Preliminary Assessment and Recommendations*” in July 2011, to identify meaningful financing approaches for efficiency. The report segmented the market into three sectors, and made the following recommendations for policy makers:

1. Single Family Residential: The state should reduce the interest rates on key finance products, and increase the marketability and cost-effectiveness of these products through loan loss reserves, interest rate buy-downs, on bill collection and more.
2. Government and Institutional Sector – The state should offer education and support for public sector facility managers.
3. Commercial: The state should develop a revolving energy loan fund, master lease program, on-bill financing for thermal storage, education campaign on commercial lease financing, and operating capital financial support for Energy Service Companies (ESCOs).

In response, CPUC staff developed a proposal for energy efficiency financing that involves four elements budgeted at a total of \$180 million over two years:

1. Development of an on-bill repayment (OBR) mechanism.
2. Development of ratepayer-supported loan products to selected customer segments and for specified purposes, including use of OBR.
3. Continuation of utility on-bill *financing* until OBR becomes more widely available.
4. Collecting and sharing aggregate loan and project data with lenders to build a knowledge base and inform project risk analyses.

Many parties filed comments in response, and as a result the CPUC held a three- day workshop in February to discuss on-bill repayment. The CPUC is currently considering an OBR program that replaces ratepayer funding for on-bill finance with the larger source of third-party private capital. Customers in any sector would access loans from third party lenders to make energy efficiency improvements, and then repay the loans via a line item on their utility bills.

## Conclusion and Nationwide Replication

California’s Energy Efficiency in Existing Buildings Law is still in its earliest stages, and the next few years will shape what the program looks like, and whether or not we are achieving the level of energy savings that we had hoped for. If done well, this program could act as a model for other states. As previously discussed, California has several unique characteristics that made this bill possible. These include progressive legislators who authored and voted for the bill; a network of powerful non-profit and for-profit environmental and clean energy advocates; a history of strong energy policy and a deep commitment to energy efficiency; a state-wide identity as an “environmental leader”; and a regulatory agency that was invested in

implementing this law as ambitiously as possible. However other states also have these characteristics, and it is entirely possible that with the right advocates, we will see replication around the country.

The following tips may be helpful in enacting a statewide program:

1. *Educate policy makers* about the enormous untapped potential for energy efficiency in existing buildings, specifically regarding dollars saved and jobs created. While efficiency isn't as "sexy" as other energy measures, most policy makers will get on board once they understand the benefits.
2. *Prioritize working with all key stakeholders*, especially those that may oppose the legislation. Open communication and compromise are key.
3. *Cultivate an unlikely representative to be the public face of the campaign*. A massive energy efficiency program may be a tough sell if the same environmental groups do all the talking. Encourage building industry representatives to actively support the legislation: they will be more trusted advocates to sell the additional benefits such as green jobs and increased property values.

As the sponsoring organization, Global Green USA will continue to be committed to the successful implementation of this law. We think that the state can achieve even higher levels of savings than the CEC estimated in their previously mentioned 2005 report, and we will continue to help the state create a program that does just that.

## References

- (ACEEE) American Council for an Energy-Efficient Economy. 2011. "Berkeley, California Residential Energy Conservation Ordinance (RECO)." *Local Policy Case Studies* <http://aceee.org/sector/local-policy/case-studies/berkeley-california-residential-energy>.
- (BoC) U.S. Census Bureau. "U.S. Census Bureau." State & County QuickFacts California. January 17, 2012. <http://quickfacts.census.gov/qfd/states/06000.html> (accessed March 9, 2012).
- (DOE) United States Department of Energy. 2009. "Energy Efficiency and Retrofit Jobs in the Building Industry--Workforce Overview." Buildings Technologies Program. [http://www1.eere.energy.gov/buildings/webinar\\_archives.html](http://www1.eere.energy.gov/buildings/webinar_archives.html). Washington, D.C.
- (CEC) California Energy Commission. 2010. *2009 AB 2021 Progress Report: Achieving Cost-Effective Energy Efficiency for California*. CEC-200-2010-006. [www.energy.ca.gov/2010publications/.../CEC-200-2010-006.PDF](http://www.energy.ca.gov/2010publications/.../CEC-200-2010-006.PDF)
- \_\_\_\_\_. <http://www.energy.ca.gov/ab758/>. *AB 758 Scoping Paper*. Sacramento, CA.: California Energy Commission.
- \_\_\_\_\_. 2005. *Options for Energy Efficiency in Existing Buildings*. CEC-400-2005-039-CMF.

- \_\_\_\_\_. 2011. Press release. [http://www.energy.ca.gov/releases/2011\\_releases/2011-03-01\\_energy\\_upgrade\\_california.html](http://www.energy.ca.gov/releases/2011_releases/2011-03-01_energy_upgrade_california.html). Sacramento, CA.: California Energy Commission
- \_\_\_\_\_. 2012. "Title 24 2013 Standards, Building Efficiency Standards." Powerpoint presented at on a webinar hosted by the CEC and NRDC, Sacramento, Calif. February 15.
- (DSIRE). Database of State Incentives for Renewables & Efficiency. 2012. "New York City - Energy Conservation Requirements for Existing Buildings." North Carolina, NC State University.
- Patrick, Deval. 2011. Official Website. "Massachusetts Ranked First in the Nation for Energy Efficiency." <http://www.mass.gov/governor/pressoffice/pressreleases/2011/111020-energy-efficiency.html>. Accessed March 15, 2012.
- Hamilton, B. 2010 *A Comparison of Energy Efficiency Programmes for Existing Homes in Eleven Countries*. <http://www.climateworks.org/download/a-comparison-of-energy-efficiency-programmes-for-existing-homes-in-eleven-countries-february-2010>. United Kingdom. The Regulatory Assistance Project
- Lifsher, M. 2010. "California economy still world's eight-largest, despite recession." *The Los Angeles Times*. [http://latimesblogs.latimes.com/money\\_co/2010/12/california-economy-ranking.html](http://latimesblogs.latimes.com/money_co/2010/12/california-economy-ranking.html). Accessed March 9, 2012.
- Martinez, S, D. Wang & J. Chou. 2010. *California Restores Its Energy Efficiency Leadership* [http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0CEsQFjAF&url=http%3A%2F%2Fdocs.nrdc.org%2Fenergy%2Ffiles%2Fene\\_10030901a.pdf&ei=MdOiT6DGOailiQKDnMjTDA&usq=AFQjCNGpouSAK70Aa23qdQSV-ZJKQEYkPQ&sig2=JIN9Q6C6n2JbDU25j8IQRg](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0CEsQFjAF&url=http%3A%2F%2Fdocs.nrdc.org%2Fenergy%2Ffiles%2Fene_10030901a.pdf&ei=MdOiT6DGOailiQKDnMjTDA&usq=AFQjCNGpouSAK70Aa23qdQSV-ZJKQEYkPQ&sig2=JIN9Q6C6n2JbDU25j8IQRg) San Francisco, Calif.: Natural Resource Defense Council
- (MF HERCC) Multifamily Home Energy Retrofit Coordinating Committee. 2011. *Improving California's Multifamily Buildings: Opportunities and Recommendations for Green Retrofit and Rehab Programs*. U.S. EPA Region 9.
- PlanNYC. Greener, Greater Buildings Plan. <http://www.nyc.gov/html/planyc2030/html/about/ggbp.shtml>. New York City Government.
- Shwartz, Matthew (California Housing Partnership Corporation) and other affordable multifamily housing representatives. 2011. Personal communication
- Zabin, C. & Chapple, K. 2011. *California Workforce Education & Training Needs Assessment; For Energy Efficiency, Distributed Generation, and Demand Response*. Berkeley, Calif.: Donald Vial Center on Employment in the Green Economy.