

Comments of the Natural Resources Defense Council (NRDC) on the  
Comprehensive Energy Efficiency Program for Existing Buildings (AB 758) Scoping Report

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I. Introduction and Summary

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the California Energy Commission's (Energy Commission) staff report *Comprehensive Energy Efficiency Program for Existing Buildings Scoping Report*, dated August 2012 (Scoping Report). NRDC is a nonprofit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that Californians demand. We represent our nearly 100,000 California members' interests in receiving affordable energy services and reducing the environmental impact of California's energy consumption.

NRDC appreciates the effort of the Energy Commission staff to implement AB 758 and for soliciting input from stakeholders. Successful implementation of AB 758 will require unprecedented levels of collaboration and creativity to overcome existing barriers to achieve large scale building upgrades. Aggressively pursuing energy efficiency across the state is necessary to meet California's mandates to provide affordable, reliable energy services to customers while also meeting the state's greenhouse gas emissions limits required under Assembly Bill 32.

NRDC's comments are summarized as follows:

- The Energy Commission should initiate a collaborative process to support the development of the forthcoming draft Action Plan.
- The forthcoming AB 758 Action Plan should consider mandatory activities prior to 2015 and outline a reasonable path to phase-in such activities.
- The CEC should employ the RESNET rating system while it improves upon the California HERS II system.
- NRDC offers responses to the questions in the October 2012 Workshop Agenda.

## II. Discussion

### **1. The Energy Commission should initiate a collaborative process to support the development of the forthcoming draft Action Plan.**

We commend the Energy Commission for beginning the critical steps of including the public in the design of the forthcoming Action Plan. The October 2012 workshops yielded substantial information that will be useful for designing action items for the AB 758 Action Plan. In addition to integrating the information from the workshops and party comments, NRDC strongly recommends that the Energy Commission also invite small groups of subject matter experts to flesh out particular portions of the Action Plan before it is released for public review (e.g., workforce development, ratings, data collection, etc.).

In addition, there has been substantial work done to develop the Zero-Net Energy and HVAC action plans through the California Energy Efficiency Strategic Plan process. We recommend the Energy Commission connect with the key players involved in those processes as well to ensure consistency and to build upon previous proposals. Doing so will enable the Energy Commission staff to build in a collaborative structure to the process and vet key ideas prior to soliciting formal comments.

### **2. The forthcoming AB 758 Action Plan should consider mandatory activities prior to 2015 and outline a reasonable path to phase-in such activities.**

NRDC understands the concern raised in the October 2012 workshops that moving to mandatory actions before the market is ready could have negative impacts on various industries. However, the Commission is tasked with upgrading all existing buildings and must consider the best approach to achieving that goal. Upgrading all existing buildings will yield substantial energy savings and lower costs of energy use for customers across California. Mandatory actions are critical to reach all existing buildings and require a clear path from the Energy Commission for implementation to ensure a workable phase-in of such approaches.

As the Energy Commission is aware, one of the key opportunities to make efficiency improvements in existing buildings is at the time the building is sold, since owners often have inspections of the property and make improvements associated with a sale. Integrating energy efficiency inspections, ratings, and improvements at the time of sale represents a significant opportunity to improve the existing building stock. While there is substantial opportunity with

time of sale, there are other trigger points that should be considered as well (e.g., time of lease or time of hook up as well as time of remodeling). For those homes that do not fall under these trigger points, ratings could also be required within a certain time period on a rolling basis such as across zip codes.

The Energy Commission has already outlined key actions to achieve a time-of-sale approach in their 2005 report *Options for Energy Efficiency in Existing Buildings*.<sup>1</sup> In particular, the report suggested partnering with the real estate industry, completing the HERS Phase 2 proceeding, and establishing a one-year voluntary pilot program to demonstrate the value of time-of-sale efforts. The CEC report also provides more details on an action plan to establish time-of-sale efficiency requirements, and the state agencies that should collaborate to reach the goal.<sup>2</sup> In order to ensure the market is ready for mandatory action, the forthcoming action plan should build on previously proposed strategies to “ready” the market for mandatory actions. The Action Plan should set out a clear timeline and include methods to enable successful implementation of the identified strategies.

### **3. The CEC should employ the RESNET rating system while it improves upon the California HERS II system.**

NRDC shares party concerns with the current HERs II rating system. However, instead of considering an interim adjustment to HERS II or potentially waiting to fully resolve the HERS II issues before integrating ratings into the forthcoming Action Plan, NRDC recommends the Energy Commission use the RESNET rating system. The RESNET standard has marketplace, contractor, and homebuilder acceptance throughout the other 49 states and should be used as an alternative while the issues are worked out with the HERs II system.

As the Energy Commission is aware, ratings allow customers to understand the energy usage of their home and provide contractors with the necessary information to design the best upgrade to improve the home’s efficiency. Ratings are also critical to the effort of getting energy usage data integrated into home sales and financing information. By having a rating of the energy usage of the home, customers will more likely invest in longer term upgrades (and recoup that investment in resale value) as the rating can be used as an additional asset in a future home sale.

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<sup>1</sup> California Energy Commission, *Options for Energy Efficiency in Existing Buildings*, CEC-400-2005-039-CMF, December 2005, pp.21-25.

<sup>2</sup> *Ibid.* p.25

Finally, ratings provide an important common metric by which the state can compare the energy usage of buildings, which is critical to the effectiveness of AB 758. For these reasons, we urge the Commission to require a RESNET rating, as the state cannot afford to lose the opportunity to rate participating homes while the remaining issues are worked out.

### III. Specific Questions

The following answers respond to questions included in the October 5, 2012 version of the Agenda for the October 8 and 9, 2012 workshops:

1. *What customers are choosing building performance upgrades today? Where are the opportunities for scaling upgrades?*

The customers doing upgrades today represent a small subsection of building occupants/owners that the state is trying to reach. The CEC should encourage piloting different approaches in the forthcoming Action Plan to explore strategies that capture the broad array of customers. Clear monitoring procedures must be in place from the onset to ensure the experience is sufficiently recorded and to allow for ongoing improvements as needed.

2. *What value do building assessments bring the homeowner and/or contractor? What should be their role in upgrade programs?*

The homeowner needs to know what options are available at what cost and benefit, and should be encouraged to go as deep as possible. Building assessments provide for the deepest savings at lowest cost as the interactions between measures (such as increased insulation and air sealing requiring a smaller HVAC system) can be assessed and implemented.

3. *What is the role of rebates in efficiency upgrade programs?*

Rebates are needed to jump start a market that ideally can be self-sustaining without such intervention. Rebates will continue to be needed even as financing options roll out and are a key part of the three-legged stool that will achieve substantial upgrades: (a) ratings and assessments of opportunity, (b) contractor availability and quality, and (c) financing/rebates.

4. *How can “reactive” interaction with customers (e.g., HVAC tune-ups or water heater replacements) best be leveraged to encourage whole house upgrades? How can such customer interaction encourage or enable future upgrades?*

The CEC regulations and action plan need to encourage further growth and development of a contractor network that is focused on whole-home improvement, rather than system specific. This will need to be done by “up-skilling” existing contractors to have knowledge of multiple systems. Alternatively, existing specialists at a minimum need to be trained, understand, and be able to promote other programs while they are providing services in a building. For example, a contractor replacing a failed water heater should also have the knowledge (and marketing pamphlets) to provide recommendations on other measures and whole-building opportunities.

5. *What milestones and metrics are most appropriate for measuring success of programs to motivate upgrade activity?*

Two key parameters that AB 758 program initiatives should be assessed on include depth of retrofit and market penetration.

6. *How can quality assurance be provided without excessive impact on the customer experience?*

The RESNET and BPI procedures seem to be good models to consider.

7. *How can Marketing, Education and Outreach efforts leverage and coordinate with other efficiency programs, implementers and regions?*

No comment

8. *What workforce development is desirable for the residential sector?*

Workshop comments indicated that this process would benefit from engaging a knowledgeable team on workforce issues to help draft the forthcoming Action Plan. Ensuring the right people are at the table to design the program is critical.

9. *Under what conditions would it be appropriate to include an energy rating in an upgrade project?*

Programs should strive to design upgrade projects that integrate energy ratings as a rating allows (a) lenders and buyers to capitalize the value of efficiency and (b) contractors to compete on how much efficiency they can provide. An alternative approach is to require an energy rating whenever the project is over a certain cost.

10. *At what other points in the life of a building would an energy rating be desirable?*

In addition to time of sale or lease, construction or other activity that triggers a permit for activities would be a prime opportunity to gain energy information on the building that could lead to upgrades.

11. *What market barriers exist that limit the growth of the voluntary market for HERS ratings and assessments? Is there a role for ratepayer or public funding to overcome these barriers, if so, what level is appropriate and commensurate to benefits?*

One barrier to voluntary action is the lack value to the appraisal market. Another barrier is the high cost of ratings. One way to bring down the cost is to streamline the process, thereby reducing the time it takes to carry out ratings. Other options include subsidizing the cost of the rating only if energy upgrades are taken or to provide subsidies on a sliding scale for a short period of time to jump start the market.

12. *Is there a role for HERS providers and HERS raters in the whole house upgrade programs offered by utility providers or in financing offerings supported by public dollars?*

Yes, ratings are important as they create competition between contractors for who can achieve the greatest energy savings at the lowest cost and these savings are quantified in a way that is comparable from house to house. Without ratings, contractors are only competing on a lowest cost basis, potentially for different levels of energy savings, but the home owner will not necessarily know the difference.

13. *What improvements could be made to the California HERS program and its use in utility whole house upgrade programs?*

There are numerous improvements needed that will require a targeted look at the challenges and potential solutions. The CEC should establish a process and timeline to resolve the issues identified in HERS II, but use the RESNET HERS system in the meantime. The RESNET system is widely used – 40 percent of new homes sold in 2010 and 2011 were rated using the RESNET HERS system.

14. *How do we address low-income consumers in whole building programs?*

No Comment

15. *How can low- to moderate-income consumers gain access to deeper upgrade projects?*

No Comment

16. *How can whole building programs be meshed with existing low-income programs? What barriers would need to be overcome? How can the fact that multifamily buildings have a mix of tenants that qualify for low-income assistance and tenants that do not qualify, be addressed so that whole building upgrades are feasible?*

No Comment

17. *What are effective strategies for overcoming the split-incentive barrier, such as when building owners pay for the energy efficiency improvements but the benefits accrue to the renters?*

No Comment

18. *What lessons learned from the San Diego multifamily whole building pilot should be extended into a statewide program? What issues need to be addressed?*

No Comment

19. *What can be learned from the California Solar Initiative (CSI) online database experience that can be extended to energy efficiency upgrades?*

No Comment

20. *What are the major barriers to accomplishing comprehensive data collection and centralized public access to market data?*

It is difficult for customers to have their usage data delivered to potential users of the data in an automated, instant way. As a partial solution, the CEC should explore ways to allow certain types of specified users (e.g., regulated banks, large property owners, realtors) to obtain energy usage data from the utility directly and automatically (i.e., without going through a multi-step or paper-based permission process) so long as the entity only requests data when it has received the customer's permission (such as a signed listing agreement with a realtor, or a lease agreement with a building owner). This could be tested as a pilot with a few banks, or Realtor-run MLS system in one city.

Privacy is another barrier. However, even if the resulting energy usage information to be shared with a third party is anonymized data (i.e., no personally identifiable information), it is highly useful to first correlate the data by address or other identifiers with other data (such as loan data, or square footage, or other). To do this today is not difficult mechanically, but it requires the assistance of the utility and authority to allow the sharing of data. The energy usage data set (e.g., annual energy usage by address) would be "mashed up" with the other data sets (e.g., square footage and age of house by address), then the results are anonymized before sharing (by removing address, name, etc.). A step forward would be to enable an entity (such as a contractor to the utility, or potentially a division of the CPUC or Energy Commission) to obtain a copy of energy data strictly to enable data analyses as described above and to only release or share information that is anonymous or aggregated.

21. *What safeguards exist for protecting consumer information while still allowing access to data?*

Safeguards include requiring customer permission before allowing a third-party (i.e., not the customer, and not the utility or utilities' agent) to obtain and use customer data.

22. *What options exist to collect pertinent energy savings and market characterization data without collecting personal and business sensitive data?*

See Q20

23. *What emerging initiatives hold promise to utilize smart meter data to inform decision making by homeowners/business owners/contractors/financers?*

No Comment

24. *How can energy performance tools be used successfully in the multitude of nonresidential business markets in the state? Can these tools be cost-effectively deployed in small and medium buildings?*

Yes, these tools can be cost-effective and the CEC should align this effort with the relevant Title 24 methodology. Asset ratings on a scale such as BEARS that is calibrated to Title 24 is the best basis for commercial ratings. In addition:

- The process should also allow for simplified inputs with conservative assumptions about efficiency for the less thorough methods.
- The CEC should see what steps can be automated (such as takeoffs based on photos).
- Systems should not use energy per square foot. Such an approach was tried in Title 24 in the early 1980s and led to widespread perceptions of unfairness. Codes like Title 24 and ASHRAE do not assure a constant energy intensity for the same class of buildings, so forcing evaluation on that grounds assures that some better-than-code buildings will look bad while noncompliant buildings sometimes look good.
- Low cost asset ratings can also be based on defaults that allow the user to specify mostly very simple parameters such as building square footage, number of stories, basic shape (rectangle, U-shaped, etc) and overall U values or rooftop AC efficiency.

25. *What is the proper role of public and ratepayer funded programs to increase the access to, and penetration of, energy performance tools for nonresidential buildings?*

To fund developments that are not currently happening in the market.

26. *Is it appropriate to require performance ratings for all nonresidential buildings sometime in the future? Should building performance ratings be publicly disclosed?*

Yes, performance ratings should be required and should be disclosed at least to the prospective owner and lender.

27. *Is it appropriate to require monitoring equipment in certain types and/or sizes of nonresidential buildings to improve the persistence of public and ratepayer funded efficiency improvements?*

Perhaps incentivizing activities like ISO 50001 is a first step before requirements. See how well the incentives work first, ready the market, and then determine whether such actions need to be mandatory or whether the activity is common in the market.

28. *How can whole building upgrade programs be encouraged in the nonresidential sector? Should advanced upgrades for specific equipment (e.g., advanced lighting or HVAC controls) be considered “whole building?” What should the criteria be for considering a program “whole building?”*

No Comment

29. *Given the diversity of nonresidential businesses and buildings, which energy saving strategies, tools and implementation approaches can be applied across the diversity? What are the conditions that will necessitate unique program elements to improve the efficiency of specific sectors of the nonresidential building market?*

No Comment

30. *What workforce development is needed to meet the efficiency goals in nonresidential buildings? How can workforce development be better integrated with the delivery of energy efficiency upgrades?*

See answer to Q8

31. *What barriers are there to achieving upgrades in small nonresidential buildings (less than 25,000square feet)? What strategies exist for overcoming the split-incentive barrier in small nonresidential buildings, such as when building owners pay for the energy efficiency improvements but the benefits accrue to the tenants? What community or business organizations can serve as partners for overcoming the barriers in achieving upgrades for small nonresidential buildings?*

No Comment

32. *What role should continuous commissioning play in nonresidential building upgrade programs?*

No Comment

33. *What is the proper role for regulations to achieve energy efficiency through AB 758?*

The CEC could require ratings and retrofits over a period of time (e.g., X# of ratings and/or retrofits by Y date) and work backwards to determine what actions could be voluntary and which actions will need mandatory requirements. Similarly, the CEC is in a position to determine a common level of quality certification and standards needed for upgrades and to build the workforce and supporting industry to meet those standards.

*What are the appropriate points in the life of buildings (trigger points) where regulations could be applied?*

As noted in our comments above, there are numerous trigger points that the CEC could require for ratings and ultimately upgrades. For example,

- time of sale
- time of rent/lease/hook up
- new addition/construction/remodel that triggers a particular level of permits
- refinancing
- property assessment

34. *How could the real estate industry play a role to encourage assessments, rating and upgrades as a means of differentiating homes where owners have invested in upgrades?*

The Real Estate industry has a direct link to Californians who are buying and selling property. They can use their interaction with their clients to promote homes that have lower energy use, provide sellers and buyers with critical information regarding ratings (as they are already required to do), and encourage the buyers to utilize the opportunity to conduct an assessment and upgrade the facility, which will ultimately save them money on their energy bill. Adding energy information to the MLS listings will also help promote to value of such activity.

35. *Should non-energy benefits (NEBs) be recognized in cost-effectiveness criteria for an upgrade program, and if so, how? Are there important distinctions between ratepayer-funded and other publicly funded upgrade programs in how NEBs are addressed?*

In general, the CEC should consider a cost-effectiveness analysis that aligns with the long-term vision of AB 758 and AB 32 and is consistent with the CEC's codes and standards methodology, which is more expansive than the current CPUC methodology (e.g., the CEC uses a lower discount rate, longer time horizon, etc.). Including NEBs is one aspect of this approach. Since most surveys indicate comfort is a prime sales tool for retrofits—this would imply NEBs are at times larger than energy and bill benefits.

Since attempting to quantify non-quantifiable NEBs would be extremely resource intensive, NRDC recommends that the CEC instead look to other states for methods to address this issue. States across the country have addressed this issue by calculating quantifiable NEBs (e.g., water savings) and/or by including a simple adder to account for NEBs that are not easily quantified. An adder would be preferable to the current exclusion of all NEBs in California's cost-effectiveness methodology since the value of these NEBs is not zero, but the resources to quantify non-quantifiable NEBs (e.g., comfort) are likely too great.<sup>3</sup>

36. *What process improvements or funding solutions would facilitate better compliance with the Building Energy Efficiency Standards?*

A longer term approach should be to make energy costs a factor along with principal, interest, tax, and insurance (PITI) in loan origination. The CEC could be a strong advocate with state banks and through CALPERS to move towards this practice. If this were the case, investing in efficiency would have greater value to the building owner. This would encourage stronger compliance with standards since the investment in efficiency could be recouped by receiving a more favorable loan and/or when the building is sold.

*What actions could be taken to encourage contractors to pull permits?*

One approach is to provide rewards for catching unpermitted work. The CEC could also set up a "hotline" to allow contractors who witness non-compliant activity (but do not want to be identified) to call in the incident. For such a system to work, the CEC would also need to include a plan to build up the local building department's enforcement team to ensure there is staff that could respond to claims of non-compliance as well as to enable the local departments to stay on top of the other necessary actions to ensure enforcement.

37. *How should building energy simulation software be used to make recommendations for energy upgrades? How could actual energy use, before and after the upgrade, be considered?*

No Comment

38. *Should California pursue a "HERS-lite" rating option (see page 65 of AB 758 Scoping Report)? Could this be used as a screening tool? How could it be used?*

If the intent is to reduce the burden of the current rating on customers, then the CEC should focus attention on designing regulations that streamline the process to reduce the number of staff hours needed to input the rating model. This could include automatic data entry and allowing defaults for things that are expensive to measure and do not add much value to the assessment.

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<sup>3</sup> E.g., Maine and NYSEDA include quantifiable NEBs. States like Colorado, Iowa, the Northwest, Pennsylvania, and Washington use an "adder."

39. *How effective are workforce training efforts to prepare building officials, experienced contractors and new workforce entrants for energy upgrade programs? What education or training gaps exist?*

See Q8

#### IV. Conclusion

NRDC appreciates the opportunity to comment on the issues relating to the AB 758 Scoping Report and for considering our recommendations. We look forward to continuing to work with the CEC and stakeholders to design a comprehensive program that will upgrade all existing building and help the state to capture all cost-effective energy savings.