

TO:  
ALFRED M. POLLARD

GENERAL COUNSEL

ATTENTION:

FEDERAL HOUSING FINANCE AGENCY,  
EIGHTH FLOOR, 400 SEVENTH STREET SW.,  
WASHINGTON, DC 20024.

RE: COMMENTS: RIN 2590-AA53

DATE: Monday, March 26, 2012

ACTION: ADVANCE NOTICE OF PROPOSED RULEMAKING; REQUEST FOR COMMENTS; NOTICE OF INTENT TO PREPARE ENVIRONMENTAL IMPACT STATEMENT; REQUEST FOR SCOPING COMMENTS.

Dear Mr. Pollard:

The Citizens Climate Lobby strongly opposes the proposed regulations that are prohibiting PACE Programs nationwide. We request FHFA take immediate actions to:

1. Clearly retract and stop any and all past or proposed actions and directives that, have, or may be perceived to have, caused PACE tax assessment lien priming products to be to slowed, restricted, or obstructed in any way including but not limited to all proposed actions and directives articulated in:
  - a. [07-06-10 FHFA Statement Stopping PACE](#)<sup>1</sup>
  - b. [2-28-11 FHFA "Conservator" Guidance to Fannie and Freddie re PACE](#)<sup>2</sup>
2. Clearly request and direct the OCC and the GSE's, respectively to clearly retract and stop any and all past or proposed actions and directives that, have, or may be perceived to have, caused PACE tax assessment lien priming products to be to slowed, restricted, or obstructed in any way including but not limited to all proposed actions and directives articulated in:
  1. [09-18-09 Fannie Mae Lender Letter w Concerns re: PACE](#)<sup>3</sup>
  2. [05-05-10 Fannie Mae Lender Letter Stopping PACE](#)<sup>4</sup>
  3. [05-05-10 Freddie Mac Industry Letter Stopping PACE](#)<sup>5</sup>
  4. [07-06-10 OCC Statement on PACE](#)<sup>6</sup>/[pdf version](#)<sup>7</sup>
  5. [8-31-10 Fannie Mae PACE Guidance for Existing Assessments](#)<sup>8</sup>
  6. [8-31-10 Freddie Mac Guidance Memo on Existing PACE Assessments](#)<sup>9</sup>

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**\*\*About the Author:** Antoinette Stein ([tweil@igc.org](mailto:tweil@igc.org) 650-823-7662) is a PhD Environmental Engineer specializing in Air Quality Control. She possess 6 years experience for the State of California (2005-2008 Department of Public Health, Environmental Health Laboratory Branch, Indoor Air Quality Programs; 2008-2012 Department of General Services, Procurement Division, Environmentally Preferable Purchasing (EPP) Program) Dr. Stein also has seven+ years experience at General Electric Company (Medical Systems Division and Aircraft Engines Division) with 4 innovative US Patents. Also Stein is the Co-founder and Leader of the [California Eastbay-Citizen's Climate Lobby](#), EB CCL<sup>1</sup> committed to *creating political will for a stable climate*. CCL consists of chapters in 61 other North American Cities working for a sustainable Climate in partnership with the Price Carbon Campaign, (project of the Climate Crisis Coalition and the Carbon Tax Center [www.priccarbon.org](http://www.priccarbon.org)), Friends of Earth [www.foe.org](http://www.foe.org), Dr. James Hansen, [www.columbia.edu/~jeh](http://www.columbia.edu/~jeh). Stein also co-chairs the ICLEI - Local Governments for Sustainability Community Greenhouse Gas [Emissions Accounting Protocol Lifecycle Technical Advisory Committee](#) and Chairs the [Collaborative for High Performance Schools \(CHPS\)](#) National Indoor Air Quality Technical Advisory Committee since 2006. Stein also was a Peer reviewer of the "[REEL in Alaska ROADMAP; How to meet end-use electricity needs in the Railbelt region in 2025, using half the electricity used in 2000](#)"

## Section 1: Summary COMMENTS AND RESPONSES TO THE RIN Questions

Respectfully we submit the following summary comments:

- 1. No first-lien PACE program specific protections are needed or appropriate for mortgage lenders and homeowners.**
2. There is significant need to revise metrics surrounding risks for all general energy efficiency (EE) financial mortgage products. FHFA needs to direct the GSEs + to revise and update property valuation metrics to include energy calculations for use in EE retrofitting. Update and revision of Dtl and LtV metrics should be initiated and supported to accurately reflect property values to protect homeowners and mortgage lenders.
- 3. NEPA-There are significant environmental impacts that must be fully evaluated and mitigated for the project rule making. FHFA's rule to prohibit PACE programs nationwide results in measureable and significant air pollution emissions that impact human health and the environment. Blocking the PACE Program nationwide has resulted in significant losses in otherwise saved energy efficiency. The significant air pollution emissions discriminately impact poorer communities of color living closer to the energy combustion sources nationwide. In the alternative of not prohibiting PACE programs measurable GHG emissions reductions would have been realized and climate change mitigated. This is a critical concern because there is scientific support showing that we closely approach a tipping point to unredeemable destruction. FHFA should take immediate action to reverse its regulatory steps that it has made without proper rule making steps involving public notification or commenting. FHFA should institute a fair and equitable process that fully notifies all impacted parties. FHFA's current rule making process impacts much more than just PACE programs; it grossly impacts many many other existing and new community assessments program goals for meeting important public policy regionally determined to be in the interest of the people. The US should not permit FHFA to dictate the immediate local needs of the banks at the expense of sustainability of our communities. PACE programs are like other EE saving programs and blocking PACE specifically will have no financial stabilizing effect except to take legally accessible money away from community development and shift it into the coffers of the big banks to do as they want with it in an unregulated wild west laissez faire fashion. Local elected officials have been elected to protect our communities. FHFA's colluding manipulation of banking markets is WRONGFUL! Don't be fooled by FHFA! Look at the facts and don't discriminate.**

We think it is important that PACE tax assessment lien priming products remain in full compliance with all other applicable Federal, State and Local laws and regulations. FHFA actions need to be corrected immediately because their actions indicate that the FHFA as an Agency is not exercising sound management of its own government administrative duties. FHFA has completely lost its compass and commitment to its own mission.

**Section 2 RELEVANT BACKGROUND INFORMATION: RELEVANT BACKGROUND INFORMATION:**

FHFA has relied on unsupported assumptions, conclusions and assertions that PACE pose financial risk to the GSE's.

FHFA has improperly relied on false assumptions and unsupported evidence that devastatingly mischaracterizes and improperly stereotypes PACE financial products leading to misinterpretation of the risks surrounding the PACE financial products.

1. FHFA truly has acted with outrageous conduct:
  - a. FHFA has been improperly meeting with the GSEs behind closed doors colluding and defiling against PACE appearing to be unlawfully colluding with the GSE's to shift and transfer to them access to large sums of money that they otherwise would lose to PACE programs.
  - b. FHFA has been wrongfully claiming that they are honestly acting with sincere purpose to protect homeowners, and the banks from their own constructed reality improperly playing on to the recent downfall and "demise" of the mortgage industries.
  - c. FHFA has taken unprecedented and outrageous actions instituting their own bootleg, rogue regulations which are outside of the proper legal regulatory process.
  - d. FHFA has acted to mislead, deceive, and defraud citizens, Cities, Counties, and States from access to assessment bonds they are otherwise fully eligible to receive.

In the State of CA on January 10, 2012 the California Public Utility Commission CPUC has had to recommend spending \$200M in 2013 -2014 of ratepayer funding from the California investor owned utilities to use on energy efficiency finance programs. The CPUC Administrative Law Judge Julie Fitch filed a Ruling on Energy Efficiency The CPUC recently held a February 2012 Residential Energy Efficiency Workshop and the presentations from the Energy Efficiency Workshop Experts the show that there is no ready to go financing alternative financing options including on-bill-financing. The advantages and disadvantages were presented and are discussed briefly in the presentations<sup>10</sup> The financing rates of the PACE assessments are advantageous and the long term features of the PACE assessments are preferable to all of the other alternatives. PACE has more advantageous and lower risk because the obligation is carried with the property having much higher assurance that it will be completely repaid. Finance that proposes the development of a larger efficiency financing program supported with both ratepayer funds and private capital funds. On page 103 of this ruling it states <http://docs.cpuc.ca.gov/efile/PD/162141.pdf>

*"Property Assessed Clean Energy (PACE) assessment financing, where energy-related assessments were repaid as part of local property taxes. Upon launch, PACE was expected to be the "silver bullet" perfect solution, offering affordable interest rates due to the security tied to property, and repayment from the current property owner. In the residential market, this program was thwarted by concerns from federal housing mortgage authorities over lien placement and the potential impact on federally-backed mortgages. In the California's commercial market, some PACE activities are proceeding such as in Los Angeles, Placer, and San Francisco counties. We remain hopeful that PACE will succeed in the near future in both the residential and commercial markets. **Had PACE proceeded as fast as initially appeared, it is likely we would not be undertaking such an intensive approach here to identifying other financing options. But at this point in time, we cannot count on PACE being available on a large enough scale to significantly aid in achievement of the energy savings goals laid out in the Strategic Plan, especially in the residential markets.**"*

Table TIMELINE OF EVENTS- APPEARS TO REFLECT FINANCIAL WRANGLING

No.	DATE	EVENT
1		<i>PACE programs have been under development since 2008 with much support and hard work from the DOE, LBL, NREL, and the local and State government energy and public works departments</i>
2		<i>Thousands of dollars have been engaged and partnered with Federal ARRA financing dollars.</i>
3		<i>Closed door meetings occur between the GSE's complaining about something??</i>
4		<i>Fannie Mae and Freddie Mac notified lenders on May 5, 2010, that they no longer would accept mortgages with PACE liens. Because of this action, all residential PACE programs currently are frozen.</i>
5		<p>The <a href="#">Federal Housing Finance Agency (FHFA) DIRECTIVE</a><sup>11</sup> is issued on July 6, 2010 directing Fannie Mae and Freddie Mac against purchasing mortgages for properties with PACE liens attached his Supervisory Guidance <i>calls a halt to PACE programs. These very official memos act to issue <b>bootleg regulations</b>. FHFA claims it is protecting the GSE's from unsubstantiated claims of "risky mortgages". FHFA tell the GSEs:</i></p> <p><i>Federal Housing Finance Agency (FHFA) state the following false unsubstantiated statements about PACE, that state that:</i></p> <p><i>(PACE) present significant safety and soundness concerns...</i></p> <ul style="list-style-type: none"> <li>• <i>...First liens established by PACE loans <b>are unlike routine tax assessments and pose unusual and difficult risk</b> management challenges for lenders, servicers and mortgage securities investors. The size and duration of PACE loans exceed typical local tax programs and <b>do not have the traditional community benefits associated with taxing initiatives</b>.</i></li> <li>• <i>...Underwriting for PACE programs results in collateral-based lending rather than lending based upon <b>ability-to-pay, the absence of Truth-in-Lending Act and other consumer protections, and uncertainty as to whether the home improvements actually produce meaningful reductions in energy consumption</b>.</i></li> <li>• <i>...the absence of robust underwriting standards to protect homeowners and the lack of energy retrofit standards to assist homeowners, appraisers, inspectors and lenders determine the value of retrofit products combine to <b>raise safety and soundness concerns</b>.</i></li> </ul>
6		<a href="#">Office of Comptroller of the Currency (OCC) Supervisory Guidance, Document Code 2010-25; July 6, 2010</a> <sup>12</sup>
7		<i>PACE Programs and the State of CA and NRDC file law suit against FHFA asserting that FHFA broke regulatory procedural laws and violated NEPA requirements.</i>
8		<i>State of CA California Public Utilities Commission CPUC. <b>Energy Efficiency Financing Workshop</b> - On January 10,11,12 2012 in search of developing financing routes. <a href="#">Day 2 Residential Financing Presentations</a><sup>13</sup> were on Day 2.</i>
9		<i>ENTER Day 2 Jan 11-2012-- Brad Copithorne and James Fine of EDF give EDF presentation on their "ON-BILL REPAYMENT:UNLOCKING THE ENERGY EFFICIENCY PUZZLE IN CALIFORNIA"<sup>14</sup> program that they have been trying to sell since 2011.</i>
10		<p>CPUC posts its <a href="#">Workshop Notes</a><sup>15</sup></p> <p>It is noted that Commercial PACE remains active (no opposition-- ) and appears to have high</p>

No.	DATE	EVENT
		<p>amount of support. The negative assertions are not being made by anyone. EDF publishes a Press release on EDF website</p> <p><i>"The <a href="#">California Public Utility Commission</a><sup>16</sup> took a <b>visionary step yesterday toward creating</b> the nation's first statewide on-bill repayment (<b>OBR</b>) program that uses <b>third-party financing</b> for energy upgrades of all building types. The program is based on a <a href="#">proposal</a><sup>17</sup> put together by <a href="#">Environmental Defense Fund</a>.</i></p> <p><i>"On-bill repayment is an innovative, cost-effective approach that will create a robust marketplace for energy efficiency lending, save energy users money, create jobs and avoid greenhouse gas pollution," said <a href="#">Brad Copithorne</a>, EDF's Energy and Financial Policy Specialist. "Even more good news: this proposal should lower financing costs for distributed solar projects."</i></p> <p><i>Recent studies have shown that energy <a href="#">efficiency improvements can account for nearly 30 percent of emissions reductions required to meet California's goal of reducing climate pollution 80 percent below 1990 levels by 2050</a><sup>18</sup>, with the largest share coming from the building sector – which consumes <a href="#">70% of electricity in the U.S. and emits more than a third of greenhouse gases</a><sup>19</sup>.</i></p> <p><i>The program is simple: banks and other investors would be allowed to provide loans to building owners and renters to fund energy efficiency upgrades and renewable electricity generation projects. The funding is then repaid through the customer's utility bill. The program can work for single-family, multi-family and commercial buildings and could include a <a href="#">wide variety of financing techniques</a><sup>20</sup> including loans, leases, Energy Service Agreements and Power Purchase Agreements."</i></p>
11		<p><b>On Tuesday 3-20-12 the <a href="#">CPUC ALJ</a><sup>21</sup> (see page 119) proposed that the California investor owned utilities spend \$200M in 2013 -2014 on energy efficiency finance programs.</b> See below for language (From page 119 of the document) a very large decision was made by an administrative law judge, sum of money was a result of time pressures shed its the damage they have done and assumed that some other GHG reduction mitigations will pick up what is lost by these actions because as an environmental engineer with extensive education and experience I can assert that there is NO other alternative option that can replace the losses of the PACE Programs. On-bill utility reimbursement or on-bill funding options are positive but they should NOT be considered "alternative option" to replace PACE or to offset FHFA's direct hit damages. PACE programs are much further along in their development and has much more supporting more of an infrastructural foundation built to implement and deploy it. OBR has not yet been fully piloted and it could take at least until the end of 2013 to ramp it up resulting in a significant gap in projects that could otherwise be started and completed. In the 3-20-12 the CPUC asserts that the State of CA does not hold the policy that there is one magic winner program. Instead the CPUC in its Order explains,</p> <p><i>"As articulated in the January 10, 2012 ALJ ruling on financing, the opportunities offered by an increased emphasis on financing for achieving greater levels of energy efficiency are not new. Emphasis on financing alternatives dates to the 1970s; financing offers the potential of overcoming numerous economic barriers to the adoption of deeper levels of energy efficiency. Commission staff hosted the workshops to explore new options for offering financing for energy efficiency to try to achieve the following potential major benefits:</i></p>

No.	DATE	EVENT
		<p>a. Overcoming the “first cost” of energy efficiency upgrades;</p> <p>b. Leveraging ratepayer funds by bringing in private capital;</p> <p>c. Increasing sales of energy efficient products and services;</p> <p>d. Reaching a broader set of customers and market segments; and</p> <p>e. Encouraging customers to invest in projects that will achievedeeper energy savings.</p> <p>If achieved, all of these benefits will result in much higher levels of energy efficiency in California. In addition, the financing offerings need not be limited to energy efficiency, and can support all types of demand-side investments, including energy efficiency, demand response, distributed generation, and storage. To achieve this public interest, our challenge is to design a set of program offerings that will meet the private needs of all or most of the diverse market players discussed above. <b><u>To make this happen, it quickly becomes apparent that there is no “one size fits all” approach that will work for all customer segments and all market actors. Instead, a portfolio of approaches will be necessary.</u></b> In addition, due to the complexity of the legal, policy, and practical issues surrounding design of financing options in various markets, it seems prudent to financing options in various markets, it seems prudent to design an approach where financing programs and budgets can ramp up over time based on practical experience and market participation by various customer segments.</p> <p>In keeping with these principles of diversity and scalability, we require the utilities to propose in their 2013-2014 program applications a portfolio of financing options consisting of the following three types of programs to be funded at a level of at least \$200 million over 2013-2014:</p> <ol style="list-style-type: none"> <li>1. Continuation of and improvement to the on-bill financing (OBF) programs currently in the utility 2010-2012 portfolios for nonresidential customers.</li> <li>2. Continuation of successful financing programs that were originally supported by ARRA stimulus funding in 2011 and 2012 and implemented by third parties and local governments, in some cases administered by or through the California Energy Commission.</li> <li>3. A set of new financing programs to be designed in 2012, and then offered consistently on a statewide basis, in pilot form in 2013, and at a larger scale in 2014.</li> </ol> <p>In addition, we require the utilities to develop a database or contribute to a larger database of financing-related information (including, but not necessarily limited to, credit scores, bill payment history, debt repayment history, estimated and actual energy savings), along with an approach to sharing this information”<sup>22</sup></p>

#### DISCUSSION:

FHFA openly states that its concerns have been borne out of its conversations with the GSEs providing evidence that it is engaging in targeting activities. FHFA and the GSEs in this way are aiding and abetting and conspiring against PACE program assessments which is prohibited under Business and Professions Codes in each of the PACE participating states.

FHFA’s targeted actions against only PACE financial products should be found to be violation of federal law since the concept of assessments are fully permitted by state and federal law so long as they meet assessment requirements.

PACE programs by design serve “ public purpose” and operate by assessments; they ARE NOT loans.

FHFA in this rule making and comment period has completely missed the very important fact that multiple funding mechanisms and financial products are needed to support energy efficiency not just one methodology. It is completely misguided to posture any question of seeking to find alternatives to PACE assessments with first lien priorities. We live in America in which we allow market forces to answer questions of

It is not the place of FHFA to dictate this.

Immediate supervision and regulation of Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac), and the Federal Home Loan Banks (the "Banks" is needed to correct existing deficiencies in regulations in accordance with the Housing and Economic Recovery Act of 2008 (HERA). FHFA action is needed to protect and ensure that the enterprises are operated in a "safe and sound manner" to preserve and conserve their assets and property.

We agree with all recommendation in the March 7<sup>th</sup>, 2012 FHFA Office of the [Inspector General's Audit Report](#)<sup>23</sup>, Recommends, "FHFA-OIG recommends that the Agency:

- (1) Establish and implement regulations or guidance concerning mortgage servicing oversight and risk management;
- (2) Direct Freddie Mac to take the necessary steps to implement servicer performance metrics for a larger cross section of servicers, to achieve additional credit loss savings; and
- (3)** Improve existing procedures for coordination with other federal agencies that oversee mortgage servicers. foreclosures devising safeguards



**SECTION 4 Detailed Comments is as follows:**

No conditions and restrictions relating to FHFA-regulated entities' dealings in mortgages on properties participating in PACE programs are necessary. PACE programs are assessments not loans and are not in the regulatory authority of FHFA. Even if it were a loan in the FHFA authority there is absolutely no reason for FHFA to add any conditions or restrictions that are piecemeal targeted at PACE only. FHFA should not be categorizing PACE into any special category different from all other "energy efficiency" financial mortgage products. FHFA should not be targeting or maliciously discriminating against PACE or any particular named Financial Party mortgage loan program. If FHFA finds that PACE or any program is of risk concern it is required to articulate in a financial metric what aspect, feature, or component of the product is unacceptable and may only set regulations on products specified with standard metrics. Example, FHFA regulation restricting issuance of mortgage loan products to borrowers with DTI ratios exceeding threshold. PACE is not a loan product so is excluded from FHFA mortgage loan restrictions. FHFA raises an concern and need for immediate regulations.

This rulemaking clearly identifies critical need for FHFA to engage in immediate regulatory action to protect GSE's and FHLs from concerns of risk associated with the category of general energy efficiency (EE) financial mortgage products.

FHFA should devise a unified formal standard category code to classify the many different categories of financial mortgage products that the GSEs and FHLs manage similar to the United Nations Standard Products and Services Code® (UNSPSC®) that is an open, global multi-sector standard for efficient, accurate classification of products and services used in procurement

Once a coding system is devised FHFA should begin to issue standards, guidelines and regulations regarding GSE and FHL management, reporting, disclosure, and examination requirements for important categories to systematically develop, build, and protect from risk. FHFA should work with its sister agencies such as EDD, EPA, and other offices to plan, track and transparently monitor for sustainability and directed orders.

From this rule making it is clear that additional regulations are generally needed for general energy efficiency (EE) financial mortgage products non specific to any particular named product since there are concerns of risk that have been articulated in this rulemaking that relate to the full range of general energy efficiency (EE) financial mortgage products such as on- bill- financial alternatives that are within the full regulatory authority of the FHFA. FHFA currently does not have any regulations in place to protect lenders and borrowers from risk based on Income, utility, property, and other criteria. The need for regulations under the current state of affairs and point in time we are in is great and this rulemaking should generate additional actions that are not targeted against any particular products but should be taken on with the critical goal to successfully find as many solutions as possible that are safe and sound to allow the free market system to drive and steer decisions on which products succeed.

Consumer protections have been compiled in development by the Whitehouse carefully articulating essential criteria for mortgage lender and consumer protections and they were further refined and more formally standardized by the DOE to support continuous improvement through early Piloting. FHFA should be directed to work with these agencies and interested stakeholders to develop them into formal regulation for application of use for the general energy efficiency (EE) financial mortgage product category discussed above and not simply for PACE related applications. FHFA should be directed to conduct a series of pilot programs with the GSEs, and FHLs and any voluntary partners such as assessment districts to devise a database to collect, track and compare reliable standard data from the different types of financial products for general energy efficiency (EE) financial mortgage product category. FHFA should in particular join forces with the State and regional Agencies that have begun development of such a system (SEE ACTION) together with EDD and other community and Housing agencies to assess and evaluate community economic, housing, school, hospital, etc. development joined together with EPA and others to link to

GHG and other pollutant emission reductions. There is potential to build metrics and tracking tools and dashboards that may assist every aspect of the betterment of our country and this planet.

FHFA has raised some interesting questions and concerns regarding concerning the possibility that the utility-cost savings resulting from any energy including a PACE financed project will be less than the cost of covering or servicing the obligation with respect to protection of the homeowner borrowers and the lenders. These are valid questions but moot relative to PACE because the premise of a PACE assessment is that the assessment product in the PACE programs go through design approval steps to ensure that these features are built into all PACE projects. Based on the FHFA's and the GSE's false unsubstantiated contentions concerning these misperceived constructions of risk that are not real it is very clear that FHFA and the GSE/FHLs do not understand the engineering precepts that are built into the foundation of PACE and other general energy efficiency (EE) financial mortgage products available. FHFA should be directed to go through basic training to learn and understand the basics of these programs and should be directed to construct and disseminate educational and training programs on the specific topic of general energy efficiency (EE) financial mortgage products so that there is not any further chaos or obstruction of programs because of lack of capacity in this financial product category. FHFA should be required to set up certification and accreditation credentials for personnel to attain that are tasked to manage these products. Currently there is no general energy efficiency (EE) financial mortgage product certification training or certification program but there should be one because this sector of financial mortgage products is a significant sector that should be staffed with educated staff both at FHFA and in the GSEs and FHLs. This is a clear deficiency that should be immediately addressed to assist in resolving the existing problems.

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**Question 12: topic homeowner protections**

FHFA should be very specific in its concerns regarding homeowner borrowers concerns regarding energy efficiency (EE) component products over the service life of borrowing using general energy efficiency (EE) financial mortgage products. This topic is in no way selective to any one EE financial mortgage product and should be addressed globally and regarding specifics of the EE components. For example there are life expectancy, servicing and maintenance operations and costs to all homeowner borrowers with and without EE retrofits. FHFA needs to be specific and identify the component products that raise concerns so that risk restrictions can be integrated into borrowing practices globally not just for PACE programs. FHFA should not be using PACE as a sacrificial lamb in addressing risk concerns that cross cut general energy efficiency (EE) financial mortgage product management. FHFA's discriminatory actions against PACE are improper and unfair and should be frowned upon and corrected to step up to the plate and bring betterment to all lending practices in the area of general energy efficiency (EE) financial mortgage products not just PACE. HVAC furnaces, PV panels, wall insulation, windows, etc each posses individual issues that should be discussed and addressed to eliminate any risk concerns that are possible to resolve; but it should be realized that these valid issues are not specific to PACE and should not be used to substantiate killing PACE because they will resurface in the alternative programs if brushed under the carpet while PACE is being killed with intention. PACE programs were administered by staff with capacity, training and certification to do engineering calculations to ensure that EE loan obligations do not exceed utility payback to the homeowner/resident. The scale up and integration of PACE and other EE programs have resulted in the important building of tools and infrastructure to ensure accuracy and verification of modeled project designs. FHFA should join the multi-disciplinary teams of experts that have come together to create and build useful and accurate tools and databases. FHFA should also be requiring mentorship and sharing of showcase data of ideally sustainable financial products in the EE sector. FHFA should be supporting annual conferences and reporting structures to increase and improve facilitation of ramp up.

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**Question 13: topic homeowner protections**

Published scientific data does not support FHFA's unfounded contention that PACE program projects or any EE project that is designed to meet the criteria of PACE or another currently legitimate general energy efficiency (EE) financial mortgage may or will reduce the amount they would pay to purchase the property by some or all of the amount of any outstanding PACE obligation. PACE programs are by engineering design set up to design retrofits that ADD value to the property. FHFA does not seem to get this. The following study looked at 5 studies of many retrofit projects and found that the property value increased by an average of 15 or greater %. FHFA's concern is a good concern and raises the absolute need for FHFA to be actively engaging in oversight of the GSEs and the FHLs to ensure, positively ensure that property value metrics defined by FHFL's agency oversight is quickly and directly updated in every possible way to ensure that appraisal property valuation technical methods, practices, tools, and verification are developed with FHFL pilot study support and updating of regulatory documents to ensure that such actions are developed and disseminated consistently throughout the US and scaled into full implementation. contain with protections to ?

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#### **Question 14: topic mortgage lender protections against default**

Credit underwriting standards and processes of need to be carefully and quickly assessed, evaluated and reported on as to how they work for general energy efficiency (EE) financial mortgage products including PACE programs. A number of papers have been published identifying that there are overall problems for use in general energy efficiency (EE) financial mortgage products that should be updated and continuously improved to better protect consumers and lenders. It must be acknowledged that general energy efficiency (EE) financial mortgage products are important to the overall development of the US. It must be acknowledged that general energy efficiency (EE) financial mortgage products have particular nuances and characteristics that make them different than other mortgage products giving rise to the need for FHFA to be supervising the GSEs and the FHLs to be improving the criteria and tests used to ensure low risk decisions are made. FHFA needs to work with its partners to analyze carefully US borrower sectors, and their associated housing stocks and needs to direct and supervise the creation of product characteristics that may be valid for use with different sectors to reduce risk. FHFA needs to move beyond the one size fits all policy and needs to institute issuance of regional Hearing Boards for which variance applications may be applied for and granted for programs designed to service requirements of DTI, LtV, creditworthiness, utility pay compliance, and other not yet defined metrics designed to service different population sectors, housing sectors and different EE component sectors. FHFA really needs to dive in and engage today because their capacity is needed to join the awesome team we have in the US .

#### **Question 15: topic mortgage lender protections against default**

FHFA must contact each of the PACE programs that ran programs and write them formally and request that they provide FHFA, the GSEs and the FHLs their data on:

1. What factors they consider in determining whether to provide PACE financing to a particular homeowner-borrower seeking funding for a particular project eligible for PACE financing?
2. What analytic tools presently exist to make that determination?
3. How, if at all, have the methodologies, metrics, and assumptions incorporated into such tools been tested and validated?

I personally have reviewed the websites and published documents that each of the programs have listed but FHFA raises a good point in this RIN, we as a country need to be better sharing and mining available public government

data to excel our development forward. FHFA should be directed to collect standardized information in partnership with state and regional government offices, utilities, departments of energy, environment and other interested parties to develop data that can be used to compare different energy efficiency (EE) financial mortgage products, EE programs. Survey monkey or other database collection options can be used to standardize the data collection so that evaluation may be apples to apples.

FHFA should work in partnership with community agencies to ensure that all socio economic classes of homeowners are provided access and assistance to use the best available technology to assess and evaluate

whether they as homeowner-borrowers will have sufficient income or cash flow to service the PACE obligation in addition to the homeowner-borrower's preexisting financial obligation. FHFA should be identifying all the available and being developed analytic tools that presently exist to assist them in making safe and sound determinations to support all general energy efficiency (EE) financial mortgage product decisions. There is general overlap in the tools used in the many selective energy efficiency (EE) financial mortgage products. PACE programs and other programs that have resulted in the ramping up and pioneering of methodologies, metrics, and assumptions incorporated into such tools that have been developed, tested and validated? The work that PACE has moved forward to bring to the forefront should not be disposed of for any reason. Instead FHFA and the GSE's truly owe PACE fellows an apology for the current misunderstanding. The work that has been done should be honored and awarded instead of the present slap in the face that is underway in the legal wrangling that should come to an end with a mediated hand shake and commitment to accept apologies and move forward together with mutuality. Because. Just because.

The apparent conflict of interests that appear to be involved in the activities between the FHFA and the OMR allocation should be fully investigated<sup>24</sup> and looked into as to the money issues. What needs most to be accepted is that this should not be an either or decision or a one winner takes all proposition because it is a complete failure to understand the magnitude of the problem/solution. The number of homes that need retrofitting and the expanse of this market is unfathomable and there is total and complete room for PACE AND any other program idea (OMR, OMF, etc) to come in and get active. There is no battle against actors, instead the battle is to reach the population and deploy all good ideas. PACE has a track record, and our state, regional, and federal government offices have already invested a lot into it. FHFA needs to conduct a full report of the dollars invested to date to provide justification why is a bad idea to throw away that investment when there no substantiated reason can be found to show that there is any other general energy efficiency (EE) financial mortgage product alternative that is substantially different then PACE in concerns of risk etc. They are not all created equal but they certainly do share much in common and there is great reason to promote them all and then let the market drive the system. PACE should not be killed.

## **Question 2:**

The idea that lien-priming feature of first-lien PACE obligations affect the financial risks borne by holders of mortgages affected by PACE is constructed hogwash. It is unfounded mumbo-jumbo. The position of the obligation does not have any causal effect on typical PACE obligations. The PACE obligations are designed to be built so that the annual tax time PACE obligation is less than the utility savings achieved on the operation of the house making it a wash whether or not the PACE project was or was not built because to the homeowner if the PACE project was built they send payment to the tax collector and if it was not built they send it to the utility with no difference in risk that can be found. The homeowner does get to enjoy the new comfort in the house with the retrofit and will most likely be happier and more likely to stay in the house. PACE programs include limits on the size of the obligation and

include many other credit worth checks that can be analyzed from the specific data surveyed as discussed above. To date there have not been

To the extent that the lien-priming feature of first-lien PACE obligations increases any financial risk borne by holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages, how could such parties insulate themselves from such increased risk? at what cost could such parties insulate themselves from such increased risk?

**Question 3:**

How does the lien-priming feature of first-lien PACE obligations affect any financial risk that is borne by holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and that relates to any of the following:

- The total amount of debt secured by the subject property relative to the value of the subject property (i.e., Combined Loan to Value Ratio for the property or other measures of leverage);
- The amount of funds available to pay for energy-related home-improvement projects after the subtraction of administrative fees or any other program expenses charged or deducted before funds become available to pay for an actual PACE-funded project (FHFA understands such fees and expenses can consume up to 10% or more of the funds a borrower could be obligated to repay under some PACE programs);
- The timing and nature of advancements in energy-efficiency technology;
- The timing and nature of changes in potential homebuyers' preferences regarding particular kinds of energy-efficiency projects;
- The timing, direction, and magnitude of changes in energy prices;
- The timing, direction, and magnitude of changes of property values, including the possibility of downward adjustments in value?

**Question 4:**

To the extent that the lien-priming feature of first-lien PACE obligations increases any financial risk that is borne by holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and that relates to any of the following, how and at what cost could such parties insulate themselves from that increase in risk:

- The total amount of debt secured by the subject property relative to the value of the subject property (i.e., Combined Loan to Value Ratio for the property or other measures of leverage);
- The amount of funds available to pay for energy-related home-improvement projects after the subtraction of administrative fees or any other programs expenses charged deducted before funds become available to pay for an actual PACE funded project (FHFA understands such fees and expenses can consume up to 10% or more of the funds a borrower could be obligated to repay under some PACE programs);
- The timing and nature of advancements in energy-efficiency technology;
- The timing and nature of changes in potential homebuyer preferences regarding particular kinds of energy-efficiency projects;
- The timing, direction, and magnitude of changes in energy prices;
- The timing, direction, and magnitude of changes of property values, including the possibility of downward adjustments in value

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**Question 6:**

The effect on the value of the underlying property of an energy-related home improvement project financed through a first-lien PACE program compares more favorably than the to the effect on the value of the underlying property that would flow from the same project if financed in any other manner because PACE programs are unique in that they offer the most favorable TERMS available today compared to any other program in existence today. In particular the feature that the PACE programs offer lending with long term pay period terms is a unique feature that results in the homeowner being able to design their energy efficiency (EE) project to be a significant project with measurable GHG reductions. It achieves deeper energy efficiency (EE) savings truly adding measurable VALUE and measurable retrofit benefits that the homeowner with really sense and feel in the living space not just measure at the pocket book. This is good for driving needed motivational change .

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**Question 10:**

What, if any, protections or disclosures do first-lien PACE programs provide to homeowner borrowers concerning the possibility that a PACE-financed project will cause the value of their home, net of the PACE obligation, to decline?

**Question 5:**

There are alternate energy efficiency (EE) programs in the US but none have measurable achieved the EE savings compared to PACE programs on a per dolar invested basis. The FHFA's rulemaking decision should be to allow all EE financing solutions to proceed competitively without manipulation for undue reason. FHFA should be instituting rule making that protects consumers and lenders equally from default and destructive risk. And should be regulated carefully to fully promote EE savings nationwide to all socio-economic communities not just to one sector. FHFA should be updating and developing it methods and practices to address the risk specific issues of energy efficiency (EE mortgage lending so it is optimized for ALL potential energy efficiency (EE mortgage programs not just one program. Issues of conflict of interest of FHFA policy makers should be investigated to uncover and fully reveal and eliminate any FHFA public officials from making, participating in making or attempting to use his or her official position to influence this rulemaking decision in which he or she knows or has reason to know that he or she has a financial interest in promoting any funding allocations from cities and counties and over to GSEs. Such decisions are illegal and an overreach of FHFA's authorities. FHFA needs to substantiate any contentions it appears to have that energy efficiency (EE) programs that measurable reduce GHG's and pollution regionally are not authorized programs for public good. Both President Obama and President Bush have defined in Executive Order that energy efficiency (EE) programs are infact immediate actions to be fully engaging in to LEAD by EXAMPLE. What exemption has FHFA been given from complying with EXECUTIVE ORDER? None.

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**Question 7:**

The effect on the environment of an energy-related home-improvement project financed through a first-lien PACE program have been shown to more effectively and with more bang for the buck reduce GHG emissions compare to

the effect on the environment that have an that will flow from alternative EE projects. The fact is that no other EE projects have arisen to the scale of PACE because they are not as viable in a free market system. FHFA should not manipulate markets and subsidize other programs at the expense of the environment and economic growth. The free market system should select optimum performance and there should be an even playing field of environmental regulations for all energy efficiency (EE) programs to comply with and compete in. FHFA should not be allowed to fix the price for any selected products. PACE programs should not be manipulated and deemed illegal for unsubstantiated reasons to shift access to money that PACE programs are legally entitled to use to building prosperity in the community.

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**Question 8:**

PACE programs have caused the completion of energy-related home improvement projects that would not have otherwise have been completed. These projects are all in the public records of each of the cities that have been administering the PACE programs. FHFA should not be putting the burden on the public in the public comment period for the FHFA rule to be collecting the data and compiling and evaluating this data. FHFA should have done this before it came down with its current edict to kill PACE as opposed to after the fact. NEPA clearly requires FHFA to collaborate with all public and local agencies to conduct environmental assessments BEFORE decision making not after. This violation is wrong and should be corrected immediately!. Just as the FHFA took the power illegally to make its edict to kill PACE. There should be equivalent action to reverse the FHFA's actions fully and conduct proper environmental impact study with all required steps including public comments north south east west to hear from the people. FHFA has not provided any declaration of overriding consideration to override the President's executive order. FHFA has overstepped its reach into executive levels. The Administrator of the FHFA should step done for his actions. The OIG report in Febuary has raised all the issues clearly, and this rulemaking example of the FHFA's mode of operendi clearly confirm the Inspector Generals findings. FHFA should be directed to reverse its ruling against PACE and to carefully follow the directives of the OIG. Much objective evidence exists that there were EE savings produced by PACE when it was permitted to operate and that immediately after FHFA made its edict and killed PACE that there were no additional EE savings showing the effect on the growth of EE savings in the residential sector nationwide. These destructive actions need to be rectified and repaired to allow PACE to come back online. And FHFA needs to set fair and equitable rules for general energy efficiency (EE) financial mortgage category to protect all programs from risk without any selective manipulation.

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**Question 17:**

FHFA should embrace all alternatives and devise and rule make needed changes that uphold them all fairly. There are no current Proposed Actions on the table. FHFA has come down with its edict and already enacted the rule without any evaluation of the positive or negative Environmental effects that have and that will continue to result under the administration of the FHFA's dictatorship? We live in a democracy; FHFA's actions should not be tolerated and should be reversed. FHFA should go to jail without pay.

It is worthwhile to pause for a moment and make note that FHFA is acting not only to break regulatory procedure but also is out of compliance with Executive Order that exists directing federal workers to act with the age old golden rule of "LEAD BY EXAMPLE" for meeting energy efficiency goals. Not only are PACE assessments by definition assessments because of their move away from bottom line forces and instead based on their ability to create public good that is NOT measured by the mainstream accounting methods, but the Safety and Soundness Act in 12 U.S.C. section 4513(a)(1)(B)(v), it is states that the "principal duties of the Director" is to "ensure that ... the activities of each regulated entity and the manner in which such regulated entity is operated are consistent with the ***public interest.***" (Emphasis added). For the case of PACE financial products it is essential that FHFA and all of their direction to their GSEs operate and be fully consistent with public interest. This too is laid out in [President Obama's Executive Order \(EO\) 13514](#)<sup>25</sup> that was signed by President Obama on October 5, 2009 that clarifies that it is national Executive Order,

***"In order to create a clean energy economy that will increase our Nation's prosperity, promote energy security, protect the interests of taxpayers, and safeguard the health of our environment, the Federal Government must lead by example. It is therefore the policy of the United States that Federal agencies shall increase energy efficiency;*** measure, report, and reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and storm water management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies and environmentally preferable materials, products, and services; design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; strengthen ***the vitality and livability of the communities*** in which Federal facilities are located; and inform Federal employees about and involve them in the achievement of these goals. It is further ***the policy of the United States*** that to achieve these goals and support their respective missions, ***agencies shall prioritize actions based on a full accounting of both economic and social benefits and costs and shall drive continuous improvement by annually evaluating performance, extending or expanding projects that have net benefits, and reassessing or discontinuing under-performing projects.***" (Emphasis added)

Furthermore this issue is not partisan issue of the Obama Administration only as the 2009 directive does not rescind/eliminate the requirements of Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," that was signed by the past administration, President Bush on January 24, 2007. These EO's "establish an integrated strategy towards sustainability in the Federal Government and to ***make reduction of greenhouse gas emissions (GHG) a priority for Federal agencies.***"

**FHFA has failed in participating in any due diligence to work with interested parties – FHFA has failed to participate with the parties such as in SEE ACTION**

FHFA should not be blocking PACE but instead should be working in partnership to support local governments to evaluate and mine data in the RECS to assist in setting policy to navigate PACE programs



and all other EE finance programs to ensure that the US institutes guidance, best practices, and eventually affiliated regulations such that programs work to achieve optimal EE including use in requirements for cost effectiveness to achieve the most bang for the buck

If FHFA has any issues with a participating state's laws and regulations surrounding State Assessments then FHFA should take up these issues in the proper forum. Clearly FHFA's financial expertise and knowledge is welcomed in helping to improve the PACE Assessment programs in the US but FHFA does not dictate or control these programs. White House in its "Recovery Through Retrofit" initiative in October 2009 with support from Vice President Biden clearly stated

*"Federal Departments and Agencies will work in partnership with state and local governments to establish standardized underwriting criteria and safeguards to protect consumers and minimize financial risks to the homeowners and mortgage lenders."*

FHFA, together with the GSEs have had full opportunity to provide ideas, input, and comments into the development of FHFA and the GSE's have the venue through HR 2599 to weigh in and participate. FHFA and GSEs could present a white paper of its issues to congressional committees and recommend any studies, or evaluations, or needed pilots to address any concerns. To date it has not actively participated and importantly it has not made any specific technical comments on any specific aspects or features of the Policy Framework for PACE Financing Programs or the draft bill HR 2599.

FHFA has failed to participate in the [State and Local Energy Efficiency Action Network \(SEE ACTION\)](#)<sup>26</sup> that have created an [Evaluation, Measurement and Verification \(EM&V\) Blueprint](#)<sup>27</sup> which according to their website, is composed of,

*"Approximately 30 members representing state policy makers, business leaders, utilities, non-governmental organizations, associations, etc Facilitated and co-chaired by DOE and EPA...State Energy Efficiency Action Network (SEE Action) is a **federal-state-local effort to assist state and local governments in:***

1. *Advancing efficiency policies and programs*
2. *Removing barriers and disincentives to realizing energy savings through efficiency*
3. *Growing state-level investments in cost-effective efficiency*

*This initiative has engaged diverse stakeholders in the development and implementation of eight energy efficiency roadmaps across the residential, commercial, and industrial sectors, as well as key crosscutting topics, including evaluation, measurement and verification; **financing**; building codes; consumer information and behavior; and driving ratepayer-funded efficiency through regulatory policies... The EM&V Working Group is addressing several key challenges in measuring and reporting energy efficiency results, including:*

- ***Credibility:*** *Increase the accuracy and transparency of reported energy efficiency savings by improving savings measurement and verification and standardizing an approach to reporting*

- **Timing:** Accelerate the availability of preliminary results to within three months of implementation
- **Cost:** Proactively balance the cost of EM&V with the value of information to specific audiences/stakeholders, while working to reduce the overall costs of EM&V (and intrusiveness of certain methods) in the long term.

*The priorities of the EM&V Working Group are outlined in their [blueprint](#)<sup>28</sup>, which describes key information and technical needs of states, municipalities, and their partners; and identifies the specific steps that SEE Action can take to address those needs.”*

### **FHFA’s actions represent improper targeting against PACE.**

FHFA’s actions are counter to the severity of the problem Climate Change problem that PACE addresses for public good and how extremely dire is that it so innovatively touches with progress we need. There is wide consensus that climate change is an international and national concern and that mitigating GHGs is of international need. In response to these very grave environmental concerns, PACE programs are legally viable local assessments because they achieve public good by reducing GHG emissions and mitigating climate change including adverse impacts to lands and human health including protecting sensitive populations reducing environmental justice issues. PACE programs are legally viable local assessments because they achieve public good by reducing GHG emissions and mitigating climate change and they simultaneously create jobs, improve local economies and protect national security.

The following are a number of key reports for the record that support the fact that climate change is real and that reducing GHG emissions is in fact a public good. Appendix 1 provides reference to key reports that clearly describe the Public problems surrounding global climate change and GHG reduction needs and goals for mitigation. These references support the showing of valid public purpose of PACE Program goals and actions for assessments. The following reports provide credible scientific information confirming that PACE in its goals to reduce GHG emissions is for public service and public good.

It is outrageous to find the FHFA so blatantly violating its own clear Agency office rules and regulations. It is most disconcerting that that FHFA has moved forward with its obstructive and unconstructive actions to prohibit PACE even though it received loud and clear calls to not take such actions. The behavior of the FHFA to walk away from all of the requested dialog and discussion requests that have been made to FHFA in opposition of its decision to PROHIBIT PACE is extremely disconcerting and clearly identifies that fundamental disputes exist.

PACE assessments are by definition “assessments”. FHFA has failed to accept and realize that PACE assessments are designed with precautionary intent to achieve public good including:

- a. Actions to protect the health, environment, and resources of local regions are within assessment rights of each jurisdiction. There are multiple International, US federal, and State reports consistently asserting possible significant adverse impacts of climate change making them legitimate for local

jurisdictions to take assessment actions on. The consensus exists that the negative impacts to health and environment fully support any regions position to take precautionary actions to establish PACE assessments as one primary climate actions to mitigate possible impacts. The following reports clearly reveal that taking meaningful actions in regions to reduce green house gas emissions and avoid the negative impacts of the following negative impacts is well within the scope of the definition of public good. These reports have been developed using our advances and top government and academic scientists throughout the world. Even if there are disputes or questions of whether climate change is real or actually occurring there is overwhelming scientific governmental evidence and reports to support taking immediate precautionary actions.

b. Support of PACE assessments raise the environmental justice issue that selecting the “no action” alternative has adverse health impacts on lower income individuals in the US. The science has shown that lower income individuals live in closest vicinity to where adverse environmental and health impacts occur. (ie near power plants or other primary stationary source emitters where toxics, smog, and PM are expected to be highest with any changes in global warming . As well lower income individual’s utility bills are a significantly higher percentage of their disposable income making increases in utility bills from climate change a more significant problem.

PACE programs across the country include extensive protections for homeowners including but not limited to:

1. Required contractor accreditations
2. Use of approved EE software tools to model the designed EE projects before build
3. Inclusion of Modeling of project design to meet minimum energy reduction requirements
4. Implementation of standardized audit procedures for baseline pre-build data
5. Required documentation of the EE project features
6. Test out of the built project with safety testing the project design

With PACE programs there active local government involvement and oversight and homeowners additionally conduct their own multiple bidding process **to establish best value projects**

The DOE published Program Design Best Practice Guidelines and Assessment Underwriting Best Practice Guidelines in 2010 for PACE Assessment Projects. According to DOE, “...the Department of Energy has prepared the following Best Practices to help ensure prudent financing practices during the current pilot PACE programs. These best practice guidelines are significantly more rigorous than the underwriting standards currently applied to land-secured financing districts....”

PACE pilots have been run and the best practices have been continuously improved and are being proposed into national law in HR 2599.

The Green Building Finance Consortium's and Scott Muldavin's book [\*Value Beyond Cost Savings\*](#)<sup>29</sup> presents GBFC's Sustainable Property Performance Framework, and provides the "missing link" in performance assessment critical to valuation; introduces GBFC's Sustainable Property Cost-Benefit Checklist, a comprehensive 40+ page assessment of the positive and negative risks of sustainability; introduces a six-step sustainable property financial analysis methodology; details special considerations in the underwriting of energy efficiency investment and space user demand, and provides specific recommendations for modifications to underwriting and due diligence guidelines for sustainable properties and describes in detail how to address the role of certifications in financial analysis.

US EPA has also been providing support to protect the value of homes under retrofit. They have through the [Recovery Through Retrofit Program](#)<sup>30</sup> has been working on Saving Homeowners Money and Creating Jobs; they developed the following best practices [GUIDANCE FOR ACHIEVING SAFE AND HEALTHY INDOOR ENVIRONMENTS DURING HOME ENERGY RETROFITS](#)<sup>31</sup>

The NEEA write in its report entitled "[Existing Building Renewal: Deep Energy Renovation Planning Workshop Summary Report](#)" – September 2010

*"Lack of Financial Best Practices and Tools Deep energy renovation appears risky because financing structures may not recognize true energy efficiency value, and design teams utilize first cost and simple payback more than life cycle cost analysis. There is no uniform solution or convergence on lease structure and measurement & verification (M&V). Without the equivalent of a 'meter' for energy efficiency (as there is for renewables) the utility can't underwrite the risk, and the owner of the energy renovation is flying blind. If an owner can underwrite the renovation expense recovery, he/she can show the value in the sale — and translate that value across multiple stakeholder interests — from utility to lender to tenant.*

*"How you recover expenses has a huge bearing on investing. We have a wide variety of expense sharing with tenants, and once you start overlaying complex modeling, it doesn't pencil out so much."*

*– Pat Callahan, Urban Renaissance Group*

*"We still come at [capital constraints] from the perspective that it's the owner's problem..."*

## Section 5 Table on metrics info for future regulatory work to revise underwriting criteria, etc.

NO	Report	Comments
	<a href="#">Unlocking energy efficiency in the US economy</a> <sup>32</sup>	<p>The well regarded McKinsey report, entitled July 2009 states the following: “The central conclusion of our work: Energy efficiency offers a vast, low cost energy resource for the U.S. economy-but only if the nation can craft a comprehensive and innovative approach to unlock it. Significant and persistent barriers will need to be addressed at multiple levels to stimulate demand for energy efficiency and manage its delivery across more than 100 million buildings and literally billions of devices. If executed at scale, a holistic approach would yield gross energy savings worth more than \$1.2 trillion, well above the \$520 billion needed through 2020 for upfront investment in efficiency measures (not including program costs). Such a program is estimated to reduce end use energy consumption in 2020 by 9.1 quadrillion BTUs, roughly 23 percent of projected demand, potentially in abating up to 1.1 gigatons of greenhouse gases annually.</p> <p>Five observations are relevant to a national debate about how best to pursue energy efficiency opportunities of the magnitude identified and within the timeframe considered in this report. Specifically, an overarching strategy would need to:</p> <ol style="list-style-type: none"> <li>Recognize energy efficiency as an important energy resource that can help meet future energy needs while the nation concurrently develops new no- and low-carbon energy sources.</li> <li>Formulate and launch at both national and regional levels an integrated portfolio of proven, piloted, and emerging approaches to unlock the full potential of energy efficiency</li> <li><b>Identify methods to provide the significant upfront funding required by any plan to capture energy efficiency.</b> (Emphasis added)</li> <li>Forge greater alignment between utilities, regulators, government agencies, manufacturers, and energy consumers</li> <li>Forster innovation and the development and deployment of next generation energy efficiency technologies to ensure ongoing productivity gains.</li> </ol>
	<a href="#">Delivering Energy Efficiency to Middle Income Single Family Households</a> <sup>33</sup> Authors: Mark Zimring, Merrian Goggio Borgeson, Ian Hoffman, Charles Goldman,	<p>Housing Type and Ownership -While middle income households can be found in all types of housing, the large majority (83 percent) live in single family homes... 32 million middle income households...About 63 percent of middle income households (24 million) own single family homes... Low and middle income households, in aggregate, consume less energy than these households’ numerical shares of the total population. In contrast, <b>higher income households use more energy than any other income group and more than their share of the population...</b></p> <p>The explanation for unequal energy use across income levels lies primarily with growth in the size of</p>

NO	Report	Comments
	<p>Elizabeth Stuart, Annika Todd, and Megan Billingsley Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division December 2011 LBNL-</p>	<p>homes as income rises; higher income households, on average, have more square footage to heat, cool and light and more amenities both inside and outside of the home. Compared to higher income households, middle income households have a larger share of homes that pre-date modern energy codes for residential buildings and are associated with higher energy use and operating costs per square foot (see Figure 7). <b>Among middle income households, 43 percent live in pre-1970 housing but this group</b> uses half of the energy consumed by middle income households. These older, less efficient homes are overwhelmingly owner-occupied single family homes but include some single-family rentals, especially duplexes and quads. <b>The largest single share of energy use across income groups comes from space heating.</b> ...</p> <p>Meanwhile, the share of household energy consumption used for consumer electronics, lighting and other plug loads has nearly doubled in the same period (EIA 2011). A large majority of middle income households (75 percent or more) have all of the standard appliances and equipment for a home: a stove, an oven, at least one refrigerator, a clothes washer and dryer. Consumer electronics, in particular, are the fastest growing source of consumption among U.S. households, and middle income households are part of this trend (EIA 2011). The average middle income household has at least one color television , a VCR or DVD player or both, a cordless phone and at least one cell phone. More than 70 percent have at least one personal computer, and about 60 percent have a printer and internet access at home. However, this growth in electronics is not uniform across middle income households – those with lower incomes tend to have far less electronics usage than those on the high end of middle income, who look much more like high income households (EIA 2005). ... In short, patterns of residential energy consumption are changing, and strategies for delivering energy savings to middle income households should expand beyond the traditional focus on reducing heating and cooling demand to include uses such as plug loads.... Middle income households make improvements to their homes in the form of alterations, additions, repairs and replacements. In 2008 and 2009, more than 60 percent of middle income households performed some type of improvement on their homes, spending \$83.6 billion in those two years (Census 2009). <b>Middle income households make substantial investments in improving their homes,</b></p>

NO	Report	Comments
		<p><b>providing an opportunity to incorporate energy efficiency into existing spending....</b> About \$18.2 billion of the home improvements that middle income households performed from 2008 to 2009 – roughly 22 percent – were potentially energy related (Census 2009). -- Potentially energy-related improvements include installation, replacement or repairs to insulation, roofing, central heating or central air conditioning systems. More than half of this spending – about \$10.2 billion – was on roofing repairs, additions and replacements. The only expenditure that we can assert explicitly reflects an intent to increase energy efficiency (or meet building codes that reflect that intent) is <b>insulation, which makes up \$1 billion of this energy-related home improvement spending.</b></p>
	<p><a href="#"><u>WHAT HAVE WE LEARNED FROM ENERGY EFFICIENCY FINANCING PROGRAMS,</u></a>  Sara Hayes, Steven Nadel, Chris Granda, and Kathryn Hottel  September 2011  Report Number U115  © American Council for an Energy-Efficient Economy</p>	

N O	Report	Comments
	<a href="#">American Housing Survey for the United States: 2009</a> <sup>34</sup>	<p>There is data to show that blocking PACE carries significant adverse environmental impacts because there is data clearly showing that the US housing stock is significantly mature in and is considered an significantly advanced “<b>aging home stock</b>” that creates natural forces for homeowners to proceed to make renovations in the near future to fix their failing structures. Because the economy has been in a down swing significantly limiting homeowners liquid funds there are real forces for home renovations without any innovative funding mechanism revert to “low cost” upfront costs which by definition will mean that homeowners will miss out on implementing deep retrofits with meaningful energy efficiency gains; low cost up front capitol options do not represent the most energy efficient options. There is clear and accepted science from automobile parking pricing studies to show that consumer choices on purchasing is driven by upfront first cost pricing. Because the HUD census data shows that the Housing market in the US <b><i>is an AGING home stock</i></b>, there is public policy evidence to show that energy consumption and GHG emissions can be significantly reduced by energy efficiency efforts for any and all remodels that are financed from this date forward since there is significant data to show that technologically the construction and home operation appliances (water heaters, hvacs, etc) energy use in the aging homes is significantly higher than retrofit technology.</p>
	<a href="#">Single-Family Residential Existing Construction Stock Assessment Market Research Report</a> <sup>35</sup> PREPARED BY RLW Analytics REPORT #E07-179 AUGUST 17, 2007	
	<b><i>Value Beyond Cost Savings</i></b> <sup>36</sup>  <a href="#">GBFC’s Sustainable Property Performance Framework</a> <sup>37</sup>	<p>PACE energy-related home improvement projects possess very specific value. The Green Building Finance Consortium’s and Scott Muldavin’s book <b><i>Value Beyond Cost Savings</i></b><sup>38</sup> presents GBFC’s Sustainable Property Performance Framework, and provides the “missing link” in performance assessment critical to valuation; introduces GBFC’s Sustainable Property Cost-Benefit Checklist, a comprehensive 40+ page assessment of the positive and negative risks of sustainability; introduces a six-step sustainable property financial analysis methodology; details special considerations in the underwriting of energy efficiency investment and space user demand, and provides specific recommendations for modifications to underwriting and due diligence guidelines for sustainable properties and describes in detail how to address the role of certifications in financial analysis.</p>



NO	Report	Comments
	<a href="#">Energy &amp; Cost Savings Analysis of 2009 IECC<sup>39</sup></a> , ir 2009 report entitled	<p>Energy Efficient Codes Coalition (EECC) reported "...societal benefits achieved by boosting energy efficiency and reducing energy demand. These benefits are substantial and could significantly influence public policy priorities such as:</p> <ul style="list-style-type: none"> <li>• Increasing America’s energy security by reducing energy imports and reducing peak electric and gas demand</li> <li>• Reducing the need for expensive new power plant capacity and gas rigs to meet rising electricity and gas demand</li> <li>• Reducing emissions of greenhouse gases and other air pollutants</li> <li>• Reducing or stabilizing energy prices for all Americans, by reducing energy demand in</li> <li>• buildings</li> </ul> <p>Reducing the cost of building materials—moderating energy prices reduce materials manufacturers’ energy costs and thus moderate future materials prices.”</p>
	<a href="#">Roadmap for the Home Energy Upgrade Market Residential Retrofit Working Group</a> June 2011 The	<p>“The working group’s analysis suggests that no single policy at any single level of government will scale the home energy upgrade market. Instead, multiple policy initiatives are required (e.g., renewal or enhancement of the residential efficiency tax credit, establishing a federal rebate program, or aggressive goals and targets for ratepayer-funded energy efficiency programs) to significantly accelerate the pace of home energy improvements and achieve cumulative market penetration rates of 15%-20% by 2020.+</p>
	<a href="#">“Existing Building Renewal: Deep Energy Renovation Planning Workshop Summary Report – September 2010<sup>40</sup></a> ,	<p>The NEEA write in its report entitled <a href="#">“Existing Building Renewal: Deep Energy Renovation Planning Workshop Summary Report – September 2010</a></p> <p><i>“Lack of Financial Best Practices and Tools Deep energy renovation appears risky because financing structures may not recognize true energy efficiency value, and design teams utilize first cost and simple payback more than life cycle cost analysis. There is no uniform solution or convergence on lease structure and measurement &amp; verification (M&amp;V). Without the equivalent of a ‘meter’ for energy efficiency (as there is for renewables) the utility can’t underwrite the risk, and the owner of the energy renovation is flying blind. If an owner can underwrite the renovation expense recovery, he/she can show the value in the sale — and translate that value across multiple stakeholder interests — from utility to lender to tenant.</i></p> <p><i>“How you recover expenses has a huge bearing on investing. We have a wide variety of expense sharing with tenants, and once you start overlaying complex modeling, it doesn’t pencil out so much.”</i>  <i>– Pat Callahan, Urban Renaissance Group</i></p> <p><i>“We still come at [capital constraints] from the perspective that it’s the owner’s problem...”</i></p>

NO	Report	Comments																																																																																																																																																																		
	<a href="#">National Residential Efficiency Measures Database</a> <sup>41</sup>	<p>The National Residential Efficiency Measures Database is a publicly available, centralized resource of residential building retrofit measures and costs for the U.S. building industry.</p> <p style="text-align: center;"><b>Table 52. Example Measure Savings Report for an Existing Homes Project</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Increment</th> <th colspan="2">Site Energy</th> <th colspan="2">Source Energy</th> <th colspan="2">National Average Energy Cost</th> <th colspan="3">Economics (Local Costs)</th> </tr> <tr> <th>(kWh)</th> <th>(therms)</th> <th>(MBtu)</th> <th>Savings (%)</th> <th>(\$/yr)</th> <th>Savings (%)</th> <th>(\$/yr)</th> <th>Savings (%)</th> <th>Value (\$/yr)</th> <th>Package Savings (\$/yr)</th> </tr> </thead> <tbody> <tr> <td>Pre-retrofit</td> <td>29950</td> <td>0</td> <td>309.9</td> <td></td> <td>\$ 2,995</td> <td></td> <td>\$ 2,950</td> <td></td> <td></td> <td></td> </tr> <tr> <td>+ improved walls</td> <td>27779</td> <td>0</td> <td>284.6</td> <td>7%</td> <td>\$ 2,778</td> <td>7%</td> <td>\$ 2,730</td> <td>7%</td> <td>\$ 190.4</td> <td>\$ 190</td> </tr> <tr> <td>++ Low-E windows</td> <td>25810</td> <td>0</td> <td>264.5</td> <td>14%</td> <td>\$ 2,581</td> <td>14%</td> <td>\$ 2,542</td> <td>13%</td> <td>\$ 193.9</td> <td>\$ 384</td> </tr> <tr> <td>++ Smaller A/C (5 -&gt; 4 tons)</td> <td>25420</td> <td>0</td> <td>260.5</td> <td>15%</td> <td>\$ 2,542</td> <td>15%</td> <td>\$ 2,504</td> <td>14%</td> <td>\$ 38.4</td> <td>\$ 423</td> </tr> <tr> <td>++ Including basement wall insulation</td> <td>25170</td> <td>0</td> <td>257.9</td> <td>16%</td> <td>\$ 2,517</td> <td>16%</td> <td>\$ 2,479</td> <td>15%</td> <td>\$ 24.8</td> <td>\$ 447</td> </tr> <tr> <td>++ Ground source heat pump (+ DHW)</td> <td>19331</td> <td>0</td> <td>198.1</td> <td>35%</td> <td>\$ 1,933</td> <td>35%</td> <td>\$ 1,904</td> <td>35%</td> <td>\$ 675.1</td> <td>\$ 1,023</td> </tr> <tr> <td>++ Solar DHW</td> <td>17718</td> <td>0</td> <td>181.5</td> <td>41%</td> <td>\$ 1,772</td> <td>41%</td> <td>\$ 1,745</td> <td>40%</td> <td>\$ 158.9</td> <td>\$ 1,181</td> </tr> <tr> <td>++ Lighting, appliances, and plug (post-retrofit)</td> <td>15990</td> <td>0</td> <td>160.8</td> <td>48%</td> <td>\$ 1,599</td> <td>48%</td> <td>\$ 1,545</td> <td>47%</td> <td>\$ 199.8</td> <td>\$ 1,381</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Table 51. Example Summary of Source Energy Consumption by End Use for an Existing Homes Project</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">End Use</th> <th colspan="2">Estimated Annual Source Energy</th> <th colspan="2">Source Energy Savings</th> </tr> <tr> <th>Pre-Retrofit (MBtu/yr)</th> <th>Post-Retrofit (MBtu/yr)</th> <th>Percent of End-Use</th> <th>Percent of Total</th> </tr> </thead> <tbody> <tr> <td>Space heating</td> <td>115</td> <td>45</td> <td>61%</td> <td>23%</td> </tr> <tr> <td>Space cooling</td> <td>28</td> <td>9</td> <td>67%</td> <td>6%</td> </tr> <tr> <td>DHW</td> <td>50</td> <td>14</td> <td>72%</td> <td>12%</td> </tr> <tr> <td>Lighting</td> <td>32</td> <td>12</td> <td>61%</td> <td>6%</td> </tr> <tr> <td>Appliances and MELs</td> <td>78</td> <td>76</td> <td>3%</td> <td>1%</td> </tr> <tr> <td>OA ventilation</td> <td>4</td> <td>4</td> <td>0%</td> <td>0%</td> </tr> <tr> <td><b>Total Usage</b></td> <td><b>307</b></td> <td><b>161</b></td> <td><b>48%</b></td> <td><b>48%</b></td> </tr> <tr> <td>Site generation</td> <td>0</td> <td>-76</td> <td></td> <td>25%</td> </tr> <tr> <td><b>Net Energy Use</b></td> <td><b>307</b></td> <td><b>85</b></td> <td><b>72%</b></td> <td><b>72%</b></td> </tr> </tbody> </table> <p>With support from the U.S. Department of Energy, NREL developed this tool to help users determine the most cost-effective retrofit measures for improving energy efficiency of existing homes.</p> <p>The purpose of this project is to provide a national unified database of residential building retrofit measures and associated costs. These data are accessible to software programs that evaluate most cost-effective retrofit measures to improve the energy efficiency of residential buildings.</p> <p>This publicly accessible, centralized database of retrofit measures offers the following benefits:</p> <ul style="list-style-type: none"> <li>Provides information in a standardized format</li> <li>Improves the technical consistency and accuracy of the results of software programs</li> <li>Enables experts and stakeholders to view the retrofit information and provide comments to improve data quality</li> <li>Supports building science R&amp;D</li> <li>Enhances transparency.</li> </ul> <p><b>Audience</b></p> <p>Software developers who require residential retrofit performance and</p>	Increment	Site Energy		Source Energy		National Average Energy Cost		Economics (Local Costs)			(kWh)	(therms)	(MBtu)	Savings (%)	(\$/yr)	Savings (%)	(\$/yr)	Savings (%)	Value (\$/yr)	Package Savings (\$/yr)	Pre-retrofit	29950	0	309.9		\$ 2,995		\$ 2,950				+ improved walls	27779	0	284.6	7%	\$ 2,778	7%	\$ 2,730	7%	\$ 190.4	\$ 190	++ Low-E windows	25810	0	264.5	14%	\$ 2,581	14%	\$ 2,542	13%	\$ 193.9	\$ 384	++ Smaller A/C (5 -> 4 tons)	25420	0	260.5	15%	\$ 2,542	15%	\$ 2,504	14%	\$ 38.4	\$ 423	++ Including basement wall insulation	25170	0	257.9	16%	\$ 2,517	16%	\$ 2,479	15%	\$ 24.8	\$ 447	++ Ground source heat pump (+ DHW)	19331	0	198.1	35%	\$ 1,933	35%	\$ 1,904	35%	\$ 675.1	\$ 1,023	++ Solar DHW	17718	0	181.5	41%	\$ 1,772	41%	\$ 1,745	40%	\$ 158.9	\$ 1,181	++ Lighting, appliances, and plug (post-retrofit)	15990	0	160.8	48%	\$ 1,599	48%	\$ 1,545	47%	\$ 199.8	\$ 1,381	End Use	Estimated Annual Source Energy		Source Energy Savings		Pre-Retrofit (MBtu/yr)	Post-Retrofit (MBtu/yr)	Percent of End-Use	Percent of Total	Space heating	115	45	61%	23%	Space cooling	28	9	67%	6%	DHW	50	14	72%	12%	Lighting	32	12	61%	6%	Appliances and MELs	78	76	3%	1%	OA ventilation	4	4	0%	0%	<b>Total Usage</b>	<b>307</b>	<b>161</b>	<b>48%</b>	<b>48%</b>	Site generation	0	-76		25%	<b>Net Energy Use</b>	<b>307</b>	<b>85</b>	<b>72%</b>	<b>72%</b>
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		<p>cost data for applications that evaluate residential efficiency measures are the primary audience for this database. In addition, home performance contractors and manufacturers of residential materials and equipment may find this information useful.</p> <p><b>Data Overview</b></p> <p>Following is an overview of the database structure and content. To learn more about the content, such as how measures were generated and how costs were derived, read the Development Document (<a href="#">PDF 859 KB</a>). <a href="#">Download Adobe Reader</a>.</p> <p><b>Measure Types</b></p> <p>The database offers the following types of retrofit measures:</p> <ul style="list-style-type: none"> <li>Appliances</li> <li>Domestic Hot Water</li> <li>Enclosure</li> <li>Heating, Ventilating, and Air Conditioning (HVAC)</li> <li>Lighting</li> <li>Miscellaneous</li> </ul> <p><b>Measures</b></p> <p>A measure consists of a typical 'before-component' and 'after-component' state for a certain type of retrofit activity. Each measure will have components, costs, and possibly references associated with it.</p> <p><b>Components</b></p> <p>A component provides the physical description of a particular building or system element including, but not limited to, any properties that affect the energy use of the home. A measure has a minimum of two components, before and after, but could have more than two.</p> <p><b>Properties</b></p> <p>Each component has a variety of properties to describe it in detail. The properties can include things about the component like lifetime, physical description, performance data, etc.</p> <p><b>Cost Data</b></p> <p>This database provides full cost estimates for many different retrofit measures. For each measure, the database provides a range of costs, as the cost data for a measure can vary widely across regions, houses, and contractors. Climate, construction, home features, local economy, and geographic location all affect the actual cost to perform any of these measures.</p> <p>The cost data represents the total cost to implement the retrofit measure. For example, a new air conditioning unit that just meets code may cost \$5,000. In addition to a measure that just meets code, the database may also include a measure to install a more energy-efficient</p>

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		<p>air conditioner that costs \$5,700. In this case, the cost listed in the database represents the full cost of the air conditioner (\$5,700), and not the incremental cost (\$700) to improve the unit from code.</p> <p>This database is not intended to provide specific cost estimates for a specific project. Rather, it is meant to help determine which measures may be more cost-effective. NREL makes every effort to ensure accuracy of the data; however, NREL does not assume any legal liability or responsibility for the accuracy or completeness of the information.</p>																																							
		<p>Ggg</p> <table border="1"> <caption>Source Energy Use (MBtu/yr) Data</caption> <thead> <tr> <th>Category</th> <th>BAB (MBtu/yr)</th> <th>PV End (MBtu/yr)</th> </tr> </thead> <tbody> <tr> <td>Misc. (G)</td> <td>7.4</td> <td>6.2</td> </tr> <tr> <td>Lg. Appl. (G)</td> <td>19.1</td> <td>10.1</td> </tr> <tr> <td>Hot Water (G)</td> <td>57.2</td> <td>24.9</td> </tr> <tr> <td>Heating (G)</td> <td>19.5</td> <td>10.3</td> </tr> <tr> <td>Cooling (E)</td> <td>24.0</td> <td>17.5</td> </tr> <tr> <td>HVAC Fan/Pump (E)</td> <td>12.5</td> <td>7.1</td> </tr> <tr> <td>Lights (E)</td> <td>39.1</td> <td>39.1</td> </tr> <tr> <td>Lg. Appl. (E)</td> <td></td> <td></td> </tr> <tr> <td>Vent Fan (E)</td> <td></td> <td></td> </tr> <tr> <td>Misc. (E)</td> <td></td> <td></td> </tr> <tr> <td><b>Total - PV</b></td> <td><b>187.8</b></td> <td><b>119.4</b></td> </tr> <tr> <td><b>Adj</b></td> <td><b>186.5</b></td> <td><b>-0.1</b></td> </tr> </tbody> </table>	Category	BAB (MBtu/yr)	PV End (MBtu/yr)	Misc. (G)	7.4	6.2	Lg. Appl. (G)	19.1	10.1	Hot Water (G)	57.2	24.9	Heating (G)	19.5	10.3	Cooling (E)	24.0	17.5	HVAC Fan/Pump (E)	12.5	7.1	Lights (E)	39.1	39.1	Lg. Appl. (E)			Vent Fan (E)			Misc. (E)			<b>Total - PV</b>	<b>187.8</b>	<b>119.4</b>	<b>Adj</b>	<b>186.5</b>	<b>-0.1</b>
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	<p>Practices Series.  <a href="http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/climate_region_guide.pdf">http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/climate_region_guide.pdf</a>.            Richland, WA: Pacific Northwest National Laboratory. Last accessed July 2010.            Pratt, R.; Conner, C.; Richman, E.; Ritland, K.; Sandusky, W.; Taylor, M. (1989). Description of Electric Energy Use in Single-Family Residences in the Pacific Northwest – End-Use Load and Consumer Assessment Program, Richland, WA: Pacific Northwest National Laboratory, DOE/BP-13795-21.</p>	
	<p><a href="#">Mortgage Industry National Home Energy Rating Systems Accreditation Standards</a>. .            RESNET. (2006)</p> <p>These consensus Standards were developed by the Residential Energy Services Network (RESNET) as</p>	<p>RESNET <b>NATIONAL STANDARD</b> FOR HOME ENERGY RATINGS</p> <p>101.1 Purpose</p> <p>The purpose of these standards is to ensure that accurate and consistent home energy ratings are performed by accredited home energy rating Providers through their Raters nationwide; to increase the credibility of the rating Providers with the mortgage finance industry, federal government, state governments, local governments, utility companies, and the private sector; and to promote voluntary participation in an objective, cost-effective, sustainable home energy rating process.</p> <p>Leaders in both the public and private sectors have identified the need for an accreditation process for home energy rating Providers.</p>

N O	Report	Comments
	amended in accordance with Chapter 5 of these Standards and adopted by the RESNET Board of Directors on <i>March 2, 2012</i> .	

**Section 6 NEPA: There are significant environmental impacts associated with FHFA's Proposed Rule:**

The Planet is warming due to avoidable anthropogenic GHG emissions from the built environment causing measurable climate change and adverse environmental impacts. Internationally and nationally, Climate change has been scientifically established that global warming and climate change is a verifiable problem that threatens the planet and our communities if gone unmitigated. Additionally there is consensus that reducing green house gas (GHG) emissions provides mitigation to climate change. Appendix 1 includes for the record reference to some of the primary peer reviewed government data showing that climate change is a significant environmental, health and environmental justice issue for the planet, our country, and its communities. Immediate regulatory actions are needed to protect the nation from adverse harm to the public peace, health, safety, and general welfare.

The proposed FHFA Project of enactment of the regulation Directive to PROHIBIT mortgage PACE programs possesses significant environmental impacts that must be mitigated.

There are environmental impacts from this project associated with GHG emissions and toxics that are emitted into the air because of the project. Measurement of the emissions can be estimated by modeling the estimated GHG emissions reductions achieved by each and every one of the projects approved in the 5 cities. For each city estimating the billion kilowatt-hours from the combination of all the projects by calculating the

1. Home Energy Baseline default GHG emissions of the home in the "Before Project" condition based on per square footage and regional conditions ( a certified RESNET assessor is qualified to estimate this) The National Renewable Energy Laboratory has the following data base to use for calculation [National Residential Efficiency Measures Database](#)<sup>44</sup> , prescriptive energy efficiency unit items such as those listed in the national [US ENERGY STAR Prescriptive Path List](#)<sup>45</sup> of energy efficiency items
2. Home Energy "After Retrofit Project" and regional conditions ( a certified RESNET assessor is qualified to estimate this)
3. Since FHFA stopped the program calculate an estimate of the projects that would have been accomplished if FHFA had not halted the program.
4. Estimate the amount of Home Energy that would have been saved had FHFA not halted the program in the 28 states that were geared up to run programs like the 5 cities that were running. Use the average of the 5 active cities to estimate similar progress that would have been achieved for each city in each State where PACE has passed into State Law for everyone of that State's cities that has a Climate Action Plan in place. These cities can reasonably be expected to have deployed programs like the average Home Energy Savings achieved from the 5 cities that were active.
5. Apply some analysis looking at how the programs ramped up over time to estimate trends up over time.
6. Include estimates for middle income population

These estimates of the Home Energy savings that were not achieved because of FHFA's actions halting PACE result in significant GHG emissions that would have been reduced.

Also these calculations need to be amortized over the reasonably estimated project life. Calculations should be estimated out to 2030.

From the above described analysis of the Home Energy savings for all the cities that were halted the TOTAL kilowatt-hours per year should be estimated to convert it to emissions from a 500 megawatt coal-fired power plant using the defined "[Rosenfeld](#)"<sup>46</sup> that is the electricity savings of 3 billion kilowatt-hours per year, the amount needed to replace the annual generation of a 500 megawatt coal-fired power plant. From the estimate of the coal-fired power plant the air pollution emissions should be estimated using the US EPA's emissions factors for



<b>Table 4. Toxicological and Environmental Properties of Hazardous Air Pollutants (HAPs) Emitted from Electric Generating Stations Fueled by Coal.</b>			
<b>Class of HAP</b>	<b>Notable HAPs</b>	<b>Human Health Hazards</b>	<b>Environmental Hazards</b>
Acid Gases	Hydrogen chloride, Hydrogen fluoride	Irritation to skin, eye, nose, throat, breathing passages.	Acid precipitation, damage to crops and forests.
Dioxins and Furans	2,3,7,8-tetrachlorodioxin (TCDD)	Probable carcinogen: soft-tissue sarcomas, lymphomas, and stomach carcinomas. May cause reproductive and developmental problems, damage to the immune system, and interference with hormones.	Deposits into rivers, lakes and oceans and is taken up by fish and wildlife. Accumulates in the food chain.
Mercury	Methylmercury	Damage to brain, nervous system, kidneys and liver. Causes neurological and developmental birth defects.	Taken up by fish and wildlife. Accumulates in the food chain.
Non-Mercury Metals and Metalloids (excluding radioisotopes)	Arsenic, beryllium, cadmium, chromium, nickel, selenium, manganese	Carcinogens: lung, bladder, kidney, skin. May adversely affect nervous, cardiovascular, dermal, respiratory and immune systems.	Accumulates in soil and sediments. Soluble forms may contaminate water systems.
	Lead	Damages the developing nervous system, may adversely affect learning, memory, and behavior. May cause cardiovascular and kidney effects, anemia, and weakness of ankles, wrists and fingers.	Harms plants and wildlife; accumulates in soils and sediments. May adversely affect land and water ecosystems.
Polynuclear Aromatic Hydrocarbons (PAH)	Naphthalene, benzo-a-anthracene, benzo-a-pyrene, benzo-b-fluoranthene, chrysene, dibenzo-a-anthracene	Probable carcinogens. May attach to small particulate matter and deposit in the lungs. May have adverse effects to the liver, kidney, and testes. May damage sperm cells and cause impairment of reproduction.	Exists in the vapor or particulate phase. Accumulates in soil and sediments.
Radioisotopes	Radium	Carcinogen: lung and bone. Bronchopneumonia, anemia, brain abscess.	Deposits into rivers, lakes and oceans and is taken up by fish and wildlife. Accumulates in soils, sediments, and in the food chain.
	Uranium	Carcinogen: lung and lymphatic system. Kidney disease.	
Volatile Organic Compounds	Aromatic hydrocarbons including benzene, toluene, ethylbenzene, xylene	May cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; impaired function of the lungs; delayed response to a visual stimulus; impaired memory; stomach discomfort; and effects to the liver and kidneys. May also cause adverse effects to the nervous system. Benzene is a known carcinogen.	Degrade through chemical reactions in the atmosphere and contribute to carbon-based radicals that contribute to formation of ground-level ozone and its human health effects.
	Aldehydes including formaldehyde	Probable carcinogen: lung and nasopharyngeal cancer. Eye, nose, and throat irritation, respiratory symptoms.	
Hazard information compiled from toxicological profiles and concise chemical assessment documents for specific pollutants published by the Agency for Toxic Substances and Disease Registry and World Health Organization and available on-line.			

According to the American Lung Association, [Emissions of Hazardous Air Pollutants from Coal-fired Power ...](#)<sup>47</sup> and [The Net Climate Impact of Coal-Fired Power Plant Emissions](#)

*“Some research has indicated that the burden of air quality impacts resulting from emissions by local sources may be borne disproportionately by disadvantaged communities. These impacts can occur in terms of both exposure and effect. With regard to exposure, lower-income and ethnic minority residents have been found to be disproportionately exposed to air pollution because of their proximity to industrial facilities. With regard to plants that burn coal and oil for industrial processes US EPA 2010 recently reported that:*

*“demographic analysis showed that major source boilers are located in areas where minorities share of the population living within a 3 mile buffer is higher than the national average. For these*

*same areas, the percent of the population below poverty line is also higher than the national average.”*

*In addition to elevated exposure to coal fired power plant emissions, other research has suggested that socially disadvantaged populations are at greater risk of adverse health effects of air pollution. In one study, nearly 50% of the risks for premature mortality of power plant related exposures were borne by the 25% of the population with less than high school education (Levy et al. 2002). This result reflected both higher background rates of mortality and higher relative risks for air pollution related mortality for individuals with lower education. Socially disadvantaged populations also are more likely to lack access to health care and to live in conditions associated with asthma exacerbations (Babey et al. 2007) These studies indicate that social class and ethnic-based environmental injustices appear to exist in the distribution of air pollution and effects.”*

And ALA also reports,

*Hazardous air pollutants emitted to the atmosphere by coal-fired power plants can cause a wide range of adverse health effects including damage to eyes, skin, and breathing passages; negative effects on the kidneys, lungs, and nervous system; the potential to cause cancer; impairment of neurological function and ability to learn; and pulmonary and cardiovascular disease USEPA, 2011*

US EPA has developed mass balance calculations in the stack gas and published [US EPA AP- 42 coal combustion data emission factors](#)<sup>48</sup>.

In the [Mercury study report to Congress](#)<sup>49</sup> 1997, 7.0 kg/10 J (16 lb/10 Btu) mercury emission factors was reported for coal combustion in commercial/industrial boilers - for bituminous coal

Several home energy efficiency programs have Many cityThe existing many on the ground energy efficiency programs, and others throughout the US and the world have ramped up and created many dashboard menus of lists of drag-and-drop and our National labs have worked on analysis of buildings and homeowners such as [Delivering Energy Efficiency to Middle Income Single Family Households](#)<sup>50</sup> Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, December 2011. There is the census data, and there is [Effective Tracking of Building Energy Use: Improving the Commercial Buildings and Residential Energy Consumption Surveys](#)FHFA has incorrectly made damaging claims that PACE programs pose unusual and difficult risk management challenges. FHFA’s assertions of unusual risk is incorrect.

*It is not the PACE programs that pose the unusual and difficult risk it is instead we assert that in fact FHFA is who is creating unusual and difficult risk management problems for home owners. And it is FHFA’s negligent, non-collaborative and resistive confrontational behavior and inaction that negligently has created the problems of risk that are infecting communities nationwide. It is FHFA’s laissez faire attitude and inaction to progressively work with to address problems, innovate solutions, and respond with constructive problem-solving.*

Elizabeth Stuart ([estuart@lbl.gov](mailto:estuart@lbl.gov)) at the **Lawrence Berkeley National Lab**, Environmental Energy Technologies Division [Clean Energy Program Policy Brief](#)<sup>51</sup> funded by the Department of Energy Office of Energy Efficiency and Renewable Energy, Weatherization and Intergovernmental Program, critically she asserts:

1. "Labels, certifications, and rating systems for energy efficiency performance and "green" attributes of buildings have been available in the U.S. for over 10 years, and used extensively in the European Union and Australia for longer. Such certifications and ratings can make energy efficiency more visible, and could help spur demand for energy efficiency if these designations are shown to have a positive impact on sales or rental prices."
2. And "...these studies suggest that homebuyers and commercial building owners may pay more for a building that they know is rated as energy efficient.":
3. Furthermore she reports, "**Collaborative** efforts to promote label adoption and build a large dataset of labeled buildings will be required to produce reliable study results."

FHFA contends that all homes with PACE tax assessment lien priming products are risky they are holding hard and fast to their all out PROHIBITION on them. The FHFA's RIN proposed regulations appear to be proposing an outright PROHIBITION but FHFA never comes out and says this in the RIN which is supposed to discuss any proposed regulations and their statements of reasons. But FHFA is failing to be transparent, play by the rules, or comply with legal procedures of NEPA evaluation. Importantly NEPA requires that Project Leads undergoing NEPA must be collaborative this is unclear to the public if this is what they are proposing or why.

completely restricting all PACE tax assessment lien priming products is too extreme! This is severe and unqualified action since it is not supported by any sound data and FHFA in it RIN fails to qualify and distinguish risk factors that may exist to regulate against. Instead FHFA's position is that all PACE tax assessment lien priming products are created equal and that they all carry outstanding and unmanageable intolerable risk needing immediate regulations. This position is unqualified and fails to be supportive of any reasonable statement of reasons. Contrary to FHFA's unsupported perceptions and actions there is evidence and data contrary to their false assertions. All of the following reports strongly revealed that the home average prices increased from 3 to more than 30% increases. :

Brounan and Kok (2010). [On the Economics of Energy Labels in the Housing Market](#)<sup>52</sup>

Brounan and Kok (2010) for example found that 31,000 homes sold in the Netherlands between 2008 and 2009 that were "green" rated (A, B, or C rating) under the European Energy

Performance Certificate garnered an average price premium of 3.7%, compared to non-labeled homes. “A” rated homes sold for a 10.2% premium, while “D” labeled homes (below the “green” threshold) sold for an average of 5.1% less than non-labeled homes.

Others studies similarly equally confirm these EU findings where energy efficiency infrastructure and deployment is further advanced than in the US. The LBL report that these reported findings on the value of energy efficient homes, they assert, Earth Advantage (2009). [Certified Home Performance: Assessing the Market Impacts of Third Party Certification on Residential Properties](#)<sup>53</sup>

1. Australian Department of Water, Environment, Heritage and the Arts (2008). [Energy Efficiency Rating and House Price](#)<sup>54</sup>
2. Eichholtz, Kok and Quigley (2009). [Doing Well by Doing Good? An Analysis of the Financial Performance of Green Office Buildings in the USA.](#)
3. Fuerst and McAllister (2009). [New Evidence on the Green Building Rent and Price Premium](#)<sup>55</sup>

Because FHFA’s characterization and labeling of PACE financial products is inaccurate and improper FHFA should not be permitted to take its actions against PACE financial products within FHFA’s discretion.

### **Energy Efficiency of residential buildings is an essential Mitigation step to apprehend Climate Change**

Additionally, according to the report entitled [Effective Tracking of Building Energy Use: Improving the Commercial Buildings and Residential Energy Consumption Surveys](#)<sup>56, 57</sup>,

*“The United States is responsible for nearly one-fifth of the world's energy consumption. And the energy used by the commercial and residential sectors represents approximately 40 percent of the nation's total energy consumption, and the share of these two sectors is expected to increase in the future.”*

And the well regarded McKinsey report, entitled [Unlocking energy efficiency in the US economy](#)<sup>58</sup> states,

*“The central conclusion of our work: Energy efficiency offers a vast, low cost energy resource for the U.S. economy-but only if the nation can craft a comprehensive and innovative approach to unlock it.” (emphasis added.)*

The [REEL in Alaska ROADMAP; How to meet end-use electricity needs in the Railbelt region in 2025, using half the electricity used in 2000](#)<sup>59</sup> in its regional study succinctly translates needed action. The Alaska Roadmap,

*“ demonstrates how Alaskans in the Railbelt region can meet their real electricity needs, with up to 50% greater efficiency in the use of electricity from centralized generation, by 2025 (as compared to the year 2000). Setting a destination of improving efficiency by potentially as much as 50% represents an improvement of 3.3% per year over the next 15 years, which has been shown to be achievable through harvesting “low-hanging fruit”—a combination of market-based incentives and clearly-stated policies, backed by appropriate and affordable financing, for improvements in lighting, heating, ventilation, appliances, machines, and infrastructure.”*

FHFA’s reason for proposing regulations against PACE associated products mischaracterizes the problem and has erroneously attributed adverse risk to PACE specific features. There is no evidence supporting the FHFA’s claims that PACE programs possess unsafe risk. The proposed regulations are not needed because the *lien-priming feature of first-lien PACE obligations does not present significant risk to mortgages holders would be reasonably expected to cause any GSE destabilization, they are not expected to be the significant cause of default.*

In the State of California there is a we have a Statewide Climate Action Plan that was put into Law in 2008 under AB 32. And each of the communities in CA and beyond have fully adopted resolutions and full well thought out Plans to mitigate climate change and GHG emissions.

Please immediately rule that the FHFA’s damaging and far reaching statements and actions are illegal. FHFA’s statements that including but not limited to the following FHFA statements made about PACE financial products, they

*“present significant risks to certain assets and property of the Enterprises— mortgages and mortgage-related assets— and pose unusual and difficult risk management challenges.”*

FHFA’s words have imparted much greater action then affecting only so called “outstanding first-lien PACE obligations”. FHFA’s rhetoric moved more than the GSE’s that FHFA has oversight of. FHFA’s actions have dramatically and unexpectedly caused uncalled for, unfair and undue influence far beyond the GSE’s that it has direct oversight over.

DOE in response to FHFA’s written statements to the GSE’s significantly influenced and changed DOE’s position on PACE programs. FHFA’s statements resulted in DOE moving about face from supporting and investing its own manpower, program dollars, and commitment into development and continuous improvement of PACE programs to their new hands off cold shoulder position.

FHFA’s words have dramatically influenced DOE, and the California Energy Commission essentially killing and halting nearly all PACE programs in the US is evidenced in the California’s

Attorney General Office's open letter into this RIN docket confirming FHFA's outlandish and significant devastation that has resulted in CA alone from FHFA's "warnings". CA AG states,

"Through the American Recovery and Reinvestment Act's Energy Efficiency and Conservation Block Grant Program, the Department of Energy ("DOE") expressly identified PACE as eligible for receipt of hundreds of millions of dollars in federal stimulus funds. In early 2010, a number of local governments across California were poised to launch their own PACE programs, supported in part by federal dollars administered through the California Energy Commission. By February 2010, the California Energy Commission already had awarded tens of millions of dollars in Recovery Act State Energy Program funding to support California PACE programs. DOE also spearheaded an effort to develop "best practices guidelines" for PACE programs in its "Guidelines for Pilot PACE Financing Programs."

#### THE AGENCY'S ACTIONS TO PAUSE PACE PROGRAMS

On July 6, 2010, the Agency unexpectedly issued a "Statement on Certain Energy Retrofit Loan Programs" stating the Agency's intent to "pause" PACE programs." ... In response to the Agency's July 2010 Directive, DOE publicly announced that "prudent management of the Recovery Act compels DOE and Recovery Act grantees to consider alternatives to programs in which the PACE assessment is given a senior lien priority." The California Energy Commission then cancelled its previous State Energy Program/Recovery Act awards intended to support PACE programs. Millions of dollars of federal Recovery Act funds that would have gone to support California PACE programs were awarded for other purposes."(excerpted and emphasis added)

Accordingly if DOE or any other federal party did not follow FHFA's July 2010 guidance to take "prudent actions" against PACE financial products it can be inferred that they may become liable or negligent of carelessness. FHFA's words alone have had the effect of circumventing rule making processes by assigning and placing significant financial liability and negligence on DOE and any other parties that would wished to cross FHFA's directive.

FHFA clearly has circumvented the proper administrative regulatory process and used its discretionary clout to adversely pull the plug on and rug out from beneath many hard working scientists, engineers and administrators at DOE, Lawrence Berkeley National Laboratory (LBNL) NREL, State and regional government energy Agencies and Community Planning Departments, US innovators, entrepreneurs, and trades who had up until that point in time been enthusiastically expending their expertise and dedication to actively work together on deploying residential energy efficiency projects through PACE programs from as far back as 2008. FHFA's actions are irreparable and shameful! We live in the US where technological and intellectual innovation has worked to advance our country to find solutions toward betterment and public

good it is absolutely wrong of the FHFA to have dampened our countries greatness without any true justification.

FHFA does not have legal authority over PACE. PACE projects are local assessments by statutory authority, they are NOT MORTGAGES.

FHFA has circumvented the proper regulatory procedures set forth in the US Government regarding regulatory actions. FHFA has completely circumvent their own rule making process and failed to engage in the proper venues and processes available to raise the concerns it may have regarding PACE assessments. Instead FHFA has opted to improperly issue a rogue regulatory acting Memo with intention to stop local PACE assessments in their tracks. FHFA completely subverted the due process regulatory procedure entirely. Such actions should not be tolerated or treated with understanding but should be promptly corrected to set clear precedent that such behavior in our Federal government is not admissible, and is disgraceful and embarrassing to our country as a whole especially in light of how counter their actions are to the public policy of not only the local regions but the nation and our planet as PACE has worked extremely diligently to pioneer creative solutions for expansive public good for the entire country and globe.

These failures make this rule making chaotic and unfair since the public (me and others) are not being given adequate information to engage in the rule making. We have not been given clear articulation of what the problem is. It is not our place to define it. The majority of respondents in this process have not flagged any problem and for us to be told that there have been closed door meetings with the GSEs where supposed "risk" concerns were discussed does not articulate any concern or problem. If there are proposed restrictions or conditions of any kind being considered or proposed by the FHFA or the GSE cronies please share with the public exactly what you are proposing because it sounds like you may have something in mind. Or if FHFA is only purposing federal preemption prohibiting PACE Assessments or all Assessments that have first lien priming then please clearly state this and please explain the exact background and statement of reason so we may constructively participate in the public policy dialogue and process. If there are certain banks that have concerns who are they and what exactly happened that has generated these extreme actions??

Ms. Kara Saul Rinaldi Policy Director Alliance to Save Energy recently wrote,

*"New York, which for years has been a leader in home performance programs, recently implemented a rule requiring application of the TRC at the measure-level. As a result, the program's output is declining after years of steady growth. Elsewhere, the application of the TRC has discouraged the creation of strong whole-house energy efficiency programs, or has forced program administrators to develop create programs designed to pass cost-effectiveness tests, rather than to deliver real energy savings to homeowners.*

*So what should be done to ensure the cost-effectiveness of energy efficiency programs across the country is more accurately evaluated?*

*Policy-makers and commissioners should adopt a different tool, the Program Administrator Cost (PAC) test, which compares the cost of reducing energy consumption to the cost of supplying an equivalent amount of energy. The Program Administrator Cost test makes sense as the primary screening tool for energy efficiency programs because it is relatively simple to administer, and provides a good measure of whether an energy efficient program delivers savings at a cost comparable to the cost of generating and supplying energy.*

*If the PAC test is not adopted as the primary test, a set of “best practices” should be used to administer the TRC test. Examples of best practices include testing cost-effectiveness on a program-wide or portfolio basis (not at the level of individual projects or measures), and including all benefits as well as all costs.*

*It is clear that the current process of evaluating the cost-effectiveness of energy efficiency programs needs fundamental change. The existing cost-effectiveness tests, as currently implemented, frequently undermine important public policy goals, such as job creation, carbon reduction, and energy independence. We need to stop undermining these important policy goals and ensure that policymakers have the right information, thanks to the right testing, to help homeowners save energy.*

*For a more detailed report on these issues, please see the National Home Performance Council’s new report entitled, [Getting to Fair Cost-Effectiveness Testing: Using the PAC Test, Bes....](#)<sup>60</sup>*

PACE and other EE programs have developed protective tests for homeowners to use. Robin LeBaron of the National Home Performance Council,

*“...recommends that the Program Administrator Cost test (PAC) be used as the primary test for screening energy efficiency programs. This test measures whether energy efficiency makes sense for a program administrator when compared to other supply-side alternatives, an appropriate economic consideration. The PAC test is relatively simple to administer, in that it does not require the complicated assessments necessary to determine non-energy benefits, incremental costs, and other values that are inherently difficult to quantify.”*

More on this important topic is in the references provided in the Getting to Fair Cost-Effectiveness Testing: Using the PAC Test, and in Schiller’s presentation entitled, [NAPEE Evaluation Guide and Efficiency Evaluation](#)<sup>61</sup>

Articulation of consistent and the use of standard Metric criteria s and standard calculations are important and have been under development through PACE and other EE programs.

It is essential for program soundness to PACE and all other funding programs that that clear and unambiguous articulation of the following energy efficiency terminology and metrics and best practice criteria consistent with the performance based home energy improvements criteria listed in the Cut Energy Bills at Home Act.:



For PACE financing there are important technical metrics that have been developed to use to determine low risk projects. National databases are critically needed and are underway.

FHFA needs to propose regulations that revise the definition of LtoV by revising the standards and guidelines on how property value is calculated. Specifically appraisal calculations need to be immediately updated to include measured energy efficiency in value estimates.

Loan-to-value ratio: A ratio for a single loan and property calculated by dividing the total loan amount at origination by the market value of the property securing the credit plus any readily marketable collateral or other acceptable collateral. In accordance with Interagency Guidelines for Real Estate Lending Policies established by the federal banking supervisory agencies, institutions' internal loan-to-value limits should not exceed the legal lending limit: (1) 65 percent for raw land; (2) 75 percent for land development; (3) 80 percent for commercial, multifamily, and other nonresidential loans; and (4) 85 percent for one-family to four-family residential loans. The guidelines do not specify a limit for owner-occupied one-family to four-family properties and home equity loans. However, when the loan-to-value ratio on such a loan equals or exceeds 90 percent at the time of origination, the guidelines state that the institution should require mortgage insurance or readily marketable collateral.

FHFA be required to immediately fully retract its PACE specific "Stop- Order Directive" and proceed swiftly to provide the articulated regulatory support and oversight described by the OIG on to ensure that energy efficiency financing Programs operated by the GSE's are operate in a "safe and sound manner" to fully preserve and conserve the GSE's assets and property. As a longstanding government agency FHFA should be proceeding in every step of its work to meet all administrative rules and regulations.

FHFA may consider adding into regulation to require All Assessments (not PACE only)

- 1) Track post on the local government Assessment webpage repository the associated Assessment District declaration of public good that at the time of approval and creation of all Assessment Projects that the local Assessment district
- 2) Track and post information of all Assessment Projects approved in each District
- 3) Track with time quarterly disposition and status of the Assessment Projects including tracking number of defaults that have occurred in each Assessment District

FHFA may consider adding regulations that would require each local Assessment District to send for each approved Assessment notification and disclosure of the Assessment approval to the mortgage lender where the Assessment moves into prime position.

This transparent tracking and disclosure system could be used to collect data, identify problems early and permit quick response corrective actions based on ISO 9001 and 14001 for Quality and Environmental Management System (EMS). The following EMAS Energy Efficiency Toolkit for Small and Medium sized Enterprises provides the EMS, "...this toolkit is a step by step procedure that evaluates energy consumption and costs...It identifies losses and suggests improvements to achieve the highest possible level of efficiency..."<sup>62</sup>

Transparently providing Assessment information is beneficial to all stakeholders including for home borrower protections and for Assessment District management oversight. Note the PACE Assessments are not to be selectively treated any different from the disclosure information on all other assessment Districts.

**All changes to metrics proposed in the SAVE ACT should be proposed in FHFA rulemaking. FHFA has the authority to make such rules.**

FHFA has entirely failed to consider the important factor of "years of success", or the "PACE Program track record" that clearly counters the FHFA's unsupported and false judgments that PACE financial products are high in risk. The burden of proof should be on the FHFA to justify that PACE financial products are high in risk if it believes this to be a real problem. If FHFA feels it does not yet have adequate data on this but because the impacts could be severely damaging then the FHFA should engage in a formal "pilot test" or meta data analysis collection to study and verify or dispel its hypothesis that PACE financial products are high in risk. There is available data on the PACE financial products from each of the local governments that have undertaken PACE Programs that have been under development that FHFA has an obligation to carefully analyze and mine to evaluate and determine any true risk concerns and to delineate risk factors to carve out and establish supportable provisions for FHFA rulemaking to ensure that FHFA's actions meet its goals of protecting from financial failures or disasters. FHFA should do more than take public comments to seek out evidence about the potential financial risks (e.g., the actual mortgage default rates for PACE participants as compared to non-participants, and, in the case of defaults for PACE participants, the dollar amount of any PACE assessments paid before the mortgage) and, in addition, the financial benefits of PACE to the Enterprises (which include reduced energy bills for homeowners that may actually reduce the default rate, and any increase in home value after PACE improvements) but FHFA should be working all of its sister Federal Agencies together with State and locals governments and all the stakeholders to actively and systematically collect needed data into repository infrastructural databases and libraries that may be used for further development, refinement, and continuous improvement of PACE Programs and other funding Program mechanisms. In particular movement has been initiated nationally to develop needed database and library through the SEE ACTION project. FHFA should be required to participate

and define what information it thinks is valuable to collect for its discretion such that it may obtain data for its policy decision making.

The assertion that the priming feature of PACE assessments creates significant risk simply is not verifiable. Here is an example why:

PACE projects are reported to generally limited to stay below 10% of the full mortgage. And the reported interest rate of 7-15%. On a million dollar home mortgage the max PACE assessment would be \$10000 principle and \$1000 in interest. The term of the PACE loans is between 20-30 years, making the annual payment for the PACE obligation only \$440 a year. Such an obligation for a middle income recipient is not going to push this homeowner into default. They are not going to be adding any burden on to the GSE regarding the \$440 per year. Furthermore based on the literature approved PACE projects result in at least a 15% energy gain which means that the PACE obligation will be greater than or equal to the properties energy utility savings that the PACE recipient would have been obligated to pay anyway if the energy efficient project was not built. And furthermore the home with its retrofit upgrades is not only more energy efficient but is more livable and enjoyable giving rise to higher reason for the homeowner to want to stay in and hold onto.

PACE projects are designed to not produce projects that would have been completed anyway. There is data found on the credibility of the PACE programs found in the following reports:

- [Economic Impacts from the Boulder County, Colorado, ClimateSmart Loan Program: Using Property-Assessed Clean Energy \(PACE\) Financing](#)<sup>63</sup> Marshall Goldberg and Jill K. Cliburn MRG & Associates Jason Coughlin National Renewable Energy Laboratory
- Fact sheet: [Property-Assessed Clean Energy \(PACE\) Financing of Renewables and Efficiency](#)<sup>64</sup>
- PACE and the Federal Housing Finance Agency (FHFA)By Mark Zimring and Merrian Fuller
- [Photovoltaics \(PV\) as an Eligible Measure in Residential PACE Programs: Benefits and Challenges](#)<sup>65</sup>
- Accelerating the Payment of PACE Assessments  
By Mark Zimring and Merrian Fuller AUGUST 11, 2010
- PACE Status Update  
By Mark Zimring, Ian Hoffman and Merrian Fuller
- [Driving Demand](#)<sup>66</sup>
- [Delivering Energy Efficiency to Middle Income Single Family Households](#)<sup>67</sup> Authors: Mark Zimring, Merrian Goggio Borgeson, Ian Hoffman, Charles Goldman, Elizabeth Stuart, Annika Todd, and Megan Billingsley

ppt of Driving Demand for Middle Income Energy Improvements & Addressing Housing Issues

FHFA improperly asserts that PACE projects are risky because the obligations could extend beyond the life of the EE projects. This is unsubstantiated since the majority of EE retrofits that are made have long lives. For example PV systems have been verified to have a minimum warranted life of 25 years extending beyond the pay back period:

PV life expectancy

According to the following numerous governmental expert analysis reports, PV warranties typically allow for 20 percent output degradation over the module's 20- to 25-year warranty life. But measurements of many modules put into service in the 1980s show that it's unusual to see even half that much degradation. Many of those earliest modules still perform to their original specifications. It is safe to say that modules carrying warranties of 20 years or more have a high probability of working well 30 years from now.

1. [Life Cycle Costing, www.sandia.gov/pv/docs/LCcost.htm](http://www.sandia.gov/pv/docs/LCcost.htm)
2. Doing a *life*-cycle cost analysis (LCC) gives the total cost of your *PV* system - including all ... rate and read the multiplier opposite the correct year or *span* of years. .... Whether the owner is a national *government*, small village, or an individual, ...
3. [Solar Photovoltaic Feasibility Study: City of Nitro, West Virginia, www.nrel.gov/docs/fy10osti/48594.pdf](http://www.nrel.gov/docs/fy10osti/48594.pdf), *PV modules have a life expectancy of 20–30 years, and manufacturers warranty ...*
4. [Feasibility Study of Economics and Performance of Solar ... www.nrel.gov/docs/fy11osti/49237.pdf](http://www.nrel.gov/docs/fy11osti/49237.pdf), *...have a life expectancy of 20–30 years, and manufacturer's warranty them against power ...*
5. [Life Cycle Energy Consumption and GHG Emissions of a Field PV ... www.bnl.gov/pv/files/pdf/abs\\_197.pdf](http://www.bnl.gov/pv/files/pdf/abs_197.pdf), .... The *life expectancy* of the *PV* metal support structures is assumed to be sixty years. Inverters and ...
7. [Oregon Solar Electric Guide Oregon Solar Electric Guide - Oregon.gov, oregon.gov/ENERGY/RENEW/Solar/docs/PVGuide06.pdf](http://oregon.gov/ENERGY/RENEW/Solar/docs/PVGuide06.pdf)
8. [A Consumer's Guide: Get Your Power from the Sun www.nrel.gov/docs/fy04osti/35297.pdf](http://www.nrel.gov/docs/fy04osti/35297.pdf)

Although PV now costs less than 1% of what it did in the 1970s, the amortized price over the life of the system is still about 25 cents per kilowatt-hour. This is double to quadruple what most people pay for

electricity from their utilities. A solar rebate program and net metering can help make PV more affordable, but they can't match today's price for utility electricity in most cases. Finally, unlike the electricity you purchase monthly from a utility, PV power requires a high initial investment. This means that buying a PV system is like paying years of electric bills up front. Your monthly electric bills will go down, but the initial expense of PV may be significant. By financing your PV system, you can spread the cost over many years, and rebates can also lighten your financial load.

As PACE programs have moved through pilots where all of the key protections were developed and tested to ensure that utility-cost savings resulting from a PACE financed project are greater than the cost of meeting the PACE obligations thus protecting the homeowner borrowers.

The success story of PACE programs is evidenced in the reports and data posted at each of the Assessment district's PACE websites listed in Appendix 3

The U.S. Department of Energy (DOE) has also in 2012 been launching nationally the [Home Energy Score](#)<sup>68</sup>. Partners include state and local governments, utilities, and non-profits that will implement the Home Energy Score and the [EnergySmart Home Scale \(E-Scale\)](#)<sup>69</sup> so all Americans can easily understand energy performance described in the [Builders Challenge brochure](#)<sup>70</sup>

FHFA and the GSE's NEED TO partner with DOE in these activities instead of obstructing progress. DOE has solicited for interested partners--they state, "contact the program via email at [homeenergyscore@sra.com](mailto:homeenergyscore@sra.com)."

According to the Office of the President's Collaboration in NEPA, A Handbook for NEPA Practitioners it states,

"The NEPA Task Force found collaborative practices to be synonymous with good government. These practices are also consistent with the national policy objectives set forth in Section 101 of NEPA. In this section, Congress declared it to be "the continuing policy of the Federal Government ...to create conditions under which man and nature can exist in productive harmony." To carry out this policy, Section 101 of NEPA makes it the responsibility of the federal government to take measures so that:

"the Nation may—

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural and natural aspects of our national heritage, and maintain, whenever possible, an environment which supports diversity, and variety of individual choice;
5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

The principles underlying Section 101 are in large part the central tenets of environmental conflict resolution and collaborative problem-solving. For example, environmental conflict resolution and collaborative problem-solving emphasize:

- engaging diverse interests and affected communities;
- addressing key issues of concern to public welfare;
- basing choices and recommendations on the best available information;
- analyzing impacts and consequences;
- weighing social, economic and environmental values; and
- working toward agreements with long term efficacy for future generations

These overlapping principles from environmental conflict resolution, collaborative problem-solving, and Section 101 of NEPA can help parties work through issues within the NEPA process. Whether the issue involves air quality, the economic health of communities, endangered species, the scarcity of water resources, or how we recreate on public lands, the application of these principles can anticipate conflict and respond with constructive problem-solving.

And they write,

“One of the hallmarks of NEPA is that it requires the Federal Government to involve the public in the environmental review process. To this end, the CEQ regulations implementing NEPA require agencies to make diligent efforts to involve the public in NEPA processes and to give the public notice of NEPA-related public meetings and hearings. The CEQ regulations also require agencies to actively identify parties that might be interested in a proposed federal action, and to give notice to the public through a variety of media such as the Federal Register, local newspapers, or direct mailing.<sup>4</sup> The regulations allow agencies to determine the details of each public involvement process.

Public involvement practices and techniques have evolved considerably since Congress passed NEPA in 1970. Today, it is not uncommon to complement or modify the traditional public hearing with more informal meetings that encourage citizens to interact with agency officials on a one-to-one basis, or to use innovative and pro-active methods to identify and communicate with individuals and groups that might be interested in particular governmental decisions.

Collaboration applies in many contexts and can include a broad range of activities; however, there is no set definition. This handbook focuses on collaboration in the context of NEPA where an agency engages other governmental entities and/or a balanced set of affected and interested parties in seeking agreements at one or more stages of the NEPA process by cultivating shared vision, trust, and communication. The main goal of the handbook is to encourage collaboration where appropriate by showing how agencies have collaborated with parties in the past and how agencies can better collaborate with parties in the future throughout a NEPA process.

The extent of collaboration between any parties in a NEPA process can vary considerably depending on the phase of the NEPA process and the roles assigned to each party by the lead agency. However, regardless of the level of collaboration between parties, agencies retain the responsibility for obtaining and considering the views of the general public.

The lead Federal agency is the agency charged with conducting the NEPA process. A lead agency might find opportunities to collaborate throughout the NEPA process, whether it is preparing an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). A lead agency can collaborate with others in one or more discrete stages, or in every aspect of the NEPA process. The lead agency might wish to collaborate in defining the purpose and need for a project, in developing a proposal for an action, in identifying impacts and issues, in generating alternatives, in analyzing alternatives, or in determining a preferred alternative. Documents prepared by a collaborative group during the NEPA process may become part of the NEPA administrative record.

Participants in a collaborative process need to be cognizant of the boundaries of collaborative influence and of the extent of Federal agency authority and State, Tribal and local authorities. While collaborating with others, lead agencies retain decision making authority and responsibility throughout the NEPA process, including the formulation and issuance of a Record of Decision (ROD) in the EIS process, or a Finding of No Significant Impact (FONSI) in the EA process. Using collaboration does not increase or decrease the agency's responsibilities or authority. Collaboration does not turn the NEPA process into a process where an agency's responsibility to make sound decisions is replaced by how many votes are cast for a particular option or alternative. Collaboration does enable decision makers to consider any consensus that may have been reached among the interested and affected stakeholders, furthering the lead agency's ability to make informed and timely decisions."

I have included this lengthy quote because it clearly assists in articulating the deficient FHFA's actions! And it makes it very easy to highlight and describe the appalling actions of FHFA and show that it is not only written into NEPA but that there has been years and years of development and refinement of government NEPA actions making it clear that there is no reason for FHFA to not be complying with these

precepts! They write, "... collaboration that engages a balanced set of affected and interested parties in seeking agreement at one or more stages of the NEPA process by cultivating shared vision, trust, and communication." Yet FHFA has made no efforts to cultivate shared vision, trust, or communication" instead they fail to explain to anyone what their specific concerns providing no vision except blindness, and they fail to establish any trust as they pulled the plug and the rug out before they even bothered to sit down at the table collaboratively to hear out perspectives, and they have failed miserably in communication as they have not been willing to meet with the key experts, or hold any open dialogue with the public, or the deeply involved technical experts in the multiple National laboratories, Energy Agencies or State or local government experts. Instead they claim to know it all and they claim that there is no dynamic flow of collaborative continuous improvement, working on Energy Efficiency. And furthermore it their actions fall directly center into a time when there is so much active collaboration going on by all the other parties except them. They have been standing distant and apart by choice away and selectively interacting only with the GSEs. There actions are reprehensible and disgraceful in a time when the country trying very hard to team together and work hard to move out of the current economic and environmental problems.

#### **NEPA Environmental Impact COMMENTS:**

NEPA evaluation is requested that requires environmental impacts including the estimated GHG emission releases caused by the halting of PACE programs.

required that FHFA provide complete analysis of the trends in the GHG emission savings achieved from all of the nationwide PACE programs starting from 2008.

And using graphed GHG emissions savings by year analysis determine the annual GHG emission savings and compare it to those that were achieved after the July 6,2010 letter was released. NEPA analysis include a best estimate calculation of what savings would have been achieved by all of the cities that were prohibited from PACE from the Office of Comptroller of the Currency (OCC) Supervisory Guidance that is part of this rule making.

these environmental impacts be fully expressed in the NEPA proceedings.

*FHFA has to date obstructively failed to comply with Section 101 of NEPA that,*

*"makes it the responsibility of the federal government to take measures so that:*

*"the Nation may—*

- *fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;*



- *assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;*
- *attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;*
- *preserve important historic, cultural and natural aspects of our national heritage, and maintain, whenever possible, an environment which supports diversity, and variety of individual choice;*
- *achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and"*

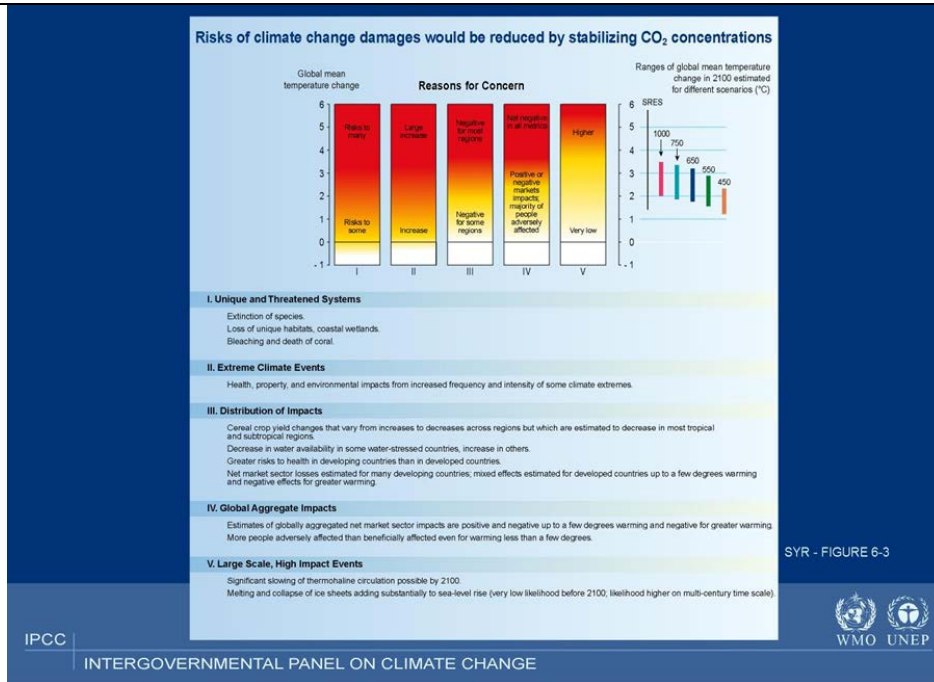


**APPENDIX A SCIENTIFIC REPORTS Climate Change**

The following reports provide verification and evidence that CLIMATE CHANGE IS REAL, CLIMATE CHANGE CAUSES ADVERSE HEALTH AND ENVIRONMENTAL IMPACTS ON NORTH AMERICA AND THE PLANET, CLIMATE CHANGE CAUSES PARTICULARLY NEGATIVE ADVERSE HEALTH AND ENVIRONMENTAL IMPACTS ON POOR, VULNERABLE AND ENVIRONMENTAL JUSTICE COMMUNITIES IN NORTH AMERICA AND THE PLANET, ENERGY EFFICIENCY MEASURES MITIGATES GHG EMISSIONS.

NO	Report Comments												
1	<div data-bbox="300 674 1101 1386" data-label="Figure"> <p><b>Summary of Projected Global Warming Impact, 2070-2099</b> (as compared with 1961-1990)</p> <table border="1"> <thead> <tr> <th>Scenario</th> <th>Warming Range (°F)</th> <th>Projected Impacts (2070-2099)</th> </tr> </thead> <tbody> <tr> <td>Higher Emissions Scenario</td> <td>8-10.5</td> <td> <ul style="list-style-type: none"> <li>90% loss in Sierra snowpack</li> <li>22-30 inches of sea level rise</li> <li>3-4 times as many heat wave days in major urban centers</li> <li>4-6 times as many heat-related deaths in major urban centers</li> <li>2.5 times more critically dry years</li> <li>20% increase in energy demand</li> </ul> </td> </tr> <tr> <td>Medium-High Emissions Scenario</td> <td>5.5-8</td> <td> <ul style="list-style-type: none"> <li>70-80% loss in Sierra snowpack</li> <li>14-22 inches of sea level rise</li> <li>2.5-4 times as many heat wave days in major urban centers</li> <li>2-6 times as many heat-related deaths in major urban centers</li> <li>75-85% increase in days conducive to ozone formation*</li> <li>2-2.5 times more critically dry years</li> <li>10% increase in electricity demand</li> <li>30% decrease in forest yields (pine)</li> <li>55% increase in the expected risk of large wildfires</li> </ul> </td> </tr> <tr> <td>Lower Emissions Scenario</td> <td>3-5.5</td> <td> <ul style="list-style-type: none"> <li>30-60% loss in Sierra snowpack</li> <li>6-14 inches of sea level rise</li> <li>2-2.5 times as many heat wave days in major urban centers</li> <li>2-3 times as many heat-related deaths in major urban centers</li> <li>25-35% increase in days conducive to ozone formation*</li> <li>Up to 1.5 times more critically dry years</li> <li>3-6% increase in electricity demand</li> <li>7-14% decrease in forest yields (pine)</li> <li>10-35% increase in the risk of large wildfires</li> </ul> </td> </tr> </tbody> </table> <p>* For high ozone locations in Los Angeles (Riverside) and the San Joaquin Valley (Visalia)</p> </div> <p data-bbox="246 1430 1187 1533"><a href="#">Our Changing Climate: Assessing the Risks to California</a><sup>71</sup> (2006) A Summary Report Produced by the California Climate Change Center in Collaboration with the Union of Concerned Scientists</p>	Scenario	Warming Range (°F)	Projected Impacts (2070-2099)	Higher Emissions Scenario	8-10.5	<ul style="list-style-type: none"> <li>90% loss in Sierra snowpack</li> <li>22-30 inches of sea level rise</li> <li>3-4 times as many heat wave days in major urban centers</li> <li>4-6 times as many heat-related deaths in major urban centers</li> <li>2.5 times more critically dry years</li> <li>20% increase in energy demand</li> </ul>	Medium-High Emissions Scenario	5.5-8	<ul style="list-style-type: none"> <li>70-80% loss in Sierra snowpack</li> <li>14-22 inches of sea level rise</li> <li>2.5-4 times as many heat wave days in major urban centers</li> <li>2-6 times as many heat-related deaths in major urban centers</li> <li>75-85% increase in days conducive to ozone formation*</li> <li>2-2.5 times more critically dry years</li> <li>10% increase in electricity demand</li> <li>30% decrease in forest yields (pine)</li> <li>55% increase in the expected risk of large wildfires</li> </ul>	Lower Emissions Scenario	3-5.5	<ul style="list-style-type: none"> <li>30-60% loss in Sierra snowpack</li> <li>6-14 inches of sea level rise</li> <li>2-2.5 times as many heat wave days in major urban centers</li> <li>2-3 times as many heat-related deaths in major urban centers</li> <li>25-35% increase in days conducive to ozone formation*</li> <li>Up to 1.5 times more critically dry years</li> <li>3-6% increase in electricity demand</li> <li>7-14% decrease in forest yields (pine)</li> <li>10-35% increase in the risk of large wildfires</li> </ul>
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2	<p data-bbox="246 1612 1187 1715">The California Department of Public Health in its report entitled, <a href="#">Public Health Impacts of Climate Change in California: Community Vulnerability Assessments and Adaptation Strategies</a><sup>72</sup></p>												

3

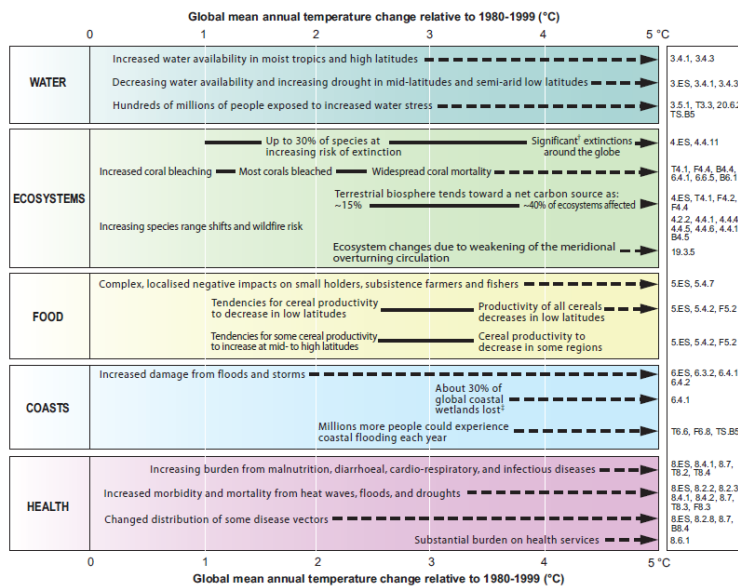


The [IPCC reports](#):<sup>73</sup>

[Human health - IPCC](#)<sup>74</sup>

**Key impacts as a function of increasing global average temperature change**

(Impacts will vary by extent of adaptation, rate of temperature change, and socio-economic pathway)



4

[Contribution of Working Group I to the Fourth Assessment Report](#)<sup>75</sup>
[Summary for Policymakers](#)

Phenomenon <sup>a</sup> and direction of trend	Likelihood of future trends based on projections for 21st century using SRES scenarios	Examples of major projected impacts by sector			
		Agriculture, forestry and ecosystems [4.4, 5.4]	Water resources [3.4]	Human health [8.2, 8.4]	Industry, settlement and society [7.4]
Over most land areas, warmer and fewer cold days and nights, warmer and more frequent hot days and nights	Virtually certain <sup>b</sup>	Increased yields in colder environments; decreased yields in warmer environments; increased insect outbreaks	Effects on water resources relying on snow melt; effects on some water supplies	Reduced human mortality from decreased cold exposure	Reduced energy demand for heating; increased demand for cooling; declining air quality in cities; reduced disruption to transport due to snow, ice; effects on winter tourism
Warm spells/heat waves. Frequency increases over most land areas	Very likely	Reduced yields in warmer regions due to heat stress; increased danger of wildfire	Increased water demand; water quality problems, e.g., algal blooms	Increased risk of heat-related mortality, especially for the elderly, chronically sick, very young and socially-isolated	Reduction in quality of life for people in warm areas without appropriate housing; impacts on the elderly, very young and poor
Heavy precipitation events. Frequency increases over most areas	Very likely	Damage to crops; soil erosion, inability to cultivate land due to waterlogging of soils	Adverse effects on quality of surface and groundwater; contamination of water supply; water scarcity may be relieved	Increased risk of deaths, injuries and infectious, respiratory and skin diseases	Disruption of settlements, commerce, transport and societies due to flooding; pressures on urban and rural infrastructures; loss of property
Area affected by drought increases	Likely	Land degradation; lower yields/crop damage and failure; increased livestock deaths; increased risk of wildfire	More widespread water stress	Increased risk of food and water shortage; increased risk of malnutrition; increased risk of water- and food-borne diseases	Water shortages for settlements, industry and societies; reduced hydropower generation potentials; potential for population migration
Intense tropical cyclone activity increases	Likely	Damage to crops; windthrow (uprooting) of trees; damage to coral reefs	Power outages causing disruption of public water supply	Increased risk of deaths, injuries, water- and food-borne diseases; post-traumatic stress disorders	Disruption by flood and high winds; withdrawal of risk coverage in vulnerable areas by private insurers, potential for population migrations, loss of property
Increased incidence of extreme high sea level (excludes tsunamis) <sup>c</sup>	Likely <sup>d</sup>	Salinisation of irrigation water, estuaries and freshwater systems	Decreased freshwater availability due to saltwater intrusion	Increased risk of deaths and injuries by drowning in floods; migration-related health	Costs of coastal protection versus costs of land-use relocation; potential for movement of populations and infrastructure; also see

The IPCC reports the following:

*“Climate change currently contributes to the global burden of disease and premature deaths (very high confidence). Human beings are exposed to climate change through changing weather patterns (temperature, precipitation, sea-level rise and more frequent extreme events) and indirectly through changes in water, air and food quality and changes in ecosystems, agriculture, industry and settlements and the economy. At this early stage the effects are small but are projected to progressively increase in all countries and regions. [8.4.1]*

*Emerging evidence of climate change effects on human health shows that climate change has:*

- *altered the distribution of some infectious disease vectors (medium confidence) [8.2.8];*
- *altered the seasonal distribution of some allergenic pollen species (high confidence) [8.2.7];*
- *increased heatwave-related deaths (medium confidence) [8.2.1].*
- *Projected trends in climate-change-related exposures of importance to human health will: increase malnutrition and consequent disorders, including those relating to child growth and development (high confidence) [8.2.3, 8.4.1];*
- *increase the number of people suffering from death, disease and*

5	<p>The National Academy's report entitled "<a href="#">Climate Change, the Indoor Environment, and Health</a>"<sup>76</sup></p> <p><i>"The indoor environment affects occupants' health and comfort. Poor environmental conditions and indoor contaminants are estimated to cost the U.S. economy tens of billions of dollars a year in exacerbation of illnesses like asthma, allergic symptoms, and subsequent lost productivity. Climate change has the potential to affect the indoor environment because conditions inside buildings are influenced by conditions outside them. Climate Change, the Indoor Environment, and Health addresses the impacts that climate change may have on the indoor environment and the resulting health effects. It finds that steps taken to mitigate climate change may cause or exacerbate harmful indoor environmental conditions. The book discusses the role the Environmental Protection Agency (EPA) should take in informing the public, health professionals, and those in the building industry about potential risks and what can be done to address them. The study also recommends that building codes account for climate change projections; that federal agencies join to develop or refine protocols and testing standards for evaluating emissions from materials, furnishings, and appliances used in buildings; and that building weatherization efforts include consideration of health effects."</i></p>
6	<p>National Academy's <a href="#">Limiting the Magnitude of Future Climate Change</a><sup>77</sup>The National Academy's report entitled "Limiting the Magnitude of Future Climate Change" Substantially reducing greenhouse gas emissions will require prompt and sustained efforts to promote major technological and behavioral changes. Although limiting emissions must be a global effort to be effective, strong U.S. actions to reduce emissions will help encourage other countries to do the same. In addition, the U.S. could establish itself as a leader in developing and deploying the technologies necessary to limit and adapt to climate change.</p>
7	<p><a href="#">Climate Change Action and Public Health</a><sup>78</sup> Linda Rudolph presentation</p>

8

**[The Climate Gap](#)**<sup>79</sup>

The report, *The Climate Gap* looks at the unequal harm climate change will have in the United States on people of color and the poor. Droughts, heat waves, poor air quality, floods, higher prices for basic necessities, and other challenges of climate change will have a disproportional impact on people of color and the poor. "Climate change does not affect everyone equally in the United States," says **Rachel Morello-Frosch**, Associate Professor of Environmental Science, Policy and Management, and of Public Health at UC Berkeley and lead author of a new report on climate change.

***"Climate change is real. The climate gap is real.***

*What we used to think was tomorrow's climate crisis is here today. Heat waves, wild fires and*

*floods are making headlines more often. What hasn't made headlines—yet—is the climate gap: the disproportionate and unequal impact the climate crisis has on people of color and the poor.*

*Unless something is done, the consequences of America's climate crisis will harm all Americans—especially those who are least able to anticipate, cope with, resist and recover from the worst consequences. This analysis is of California, which in many ways is a microcosm of the entire United States.*

***Climate change is an issue of great importance for human rights, public health, and social fairness******because of its profound consequences overall and the very real danger that poor neighborhoods and people of color will suffer even worse harms and hazards than the rest of Americans.***

*This "climate gap" is of special concern for California, home to one of the most ethnically and economically diverse populations in the country.*

***The climate gap means that communities of color and the poor will suffer more during extreme heat waves.*** *For instance, African Americans in Los Angeles are nearly twice as likely to die from a heat wave than other Los Angeles residents, and families living below the poverty line are unlikely to have access to air conditioning or cars that allow them to escape the heat.*

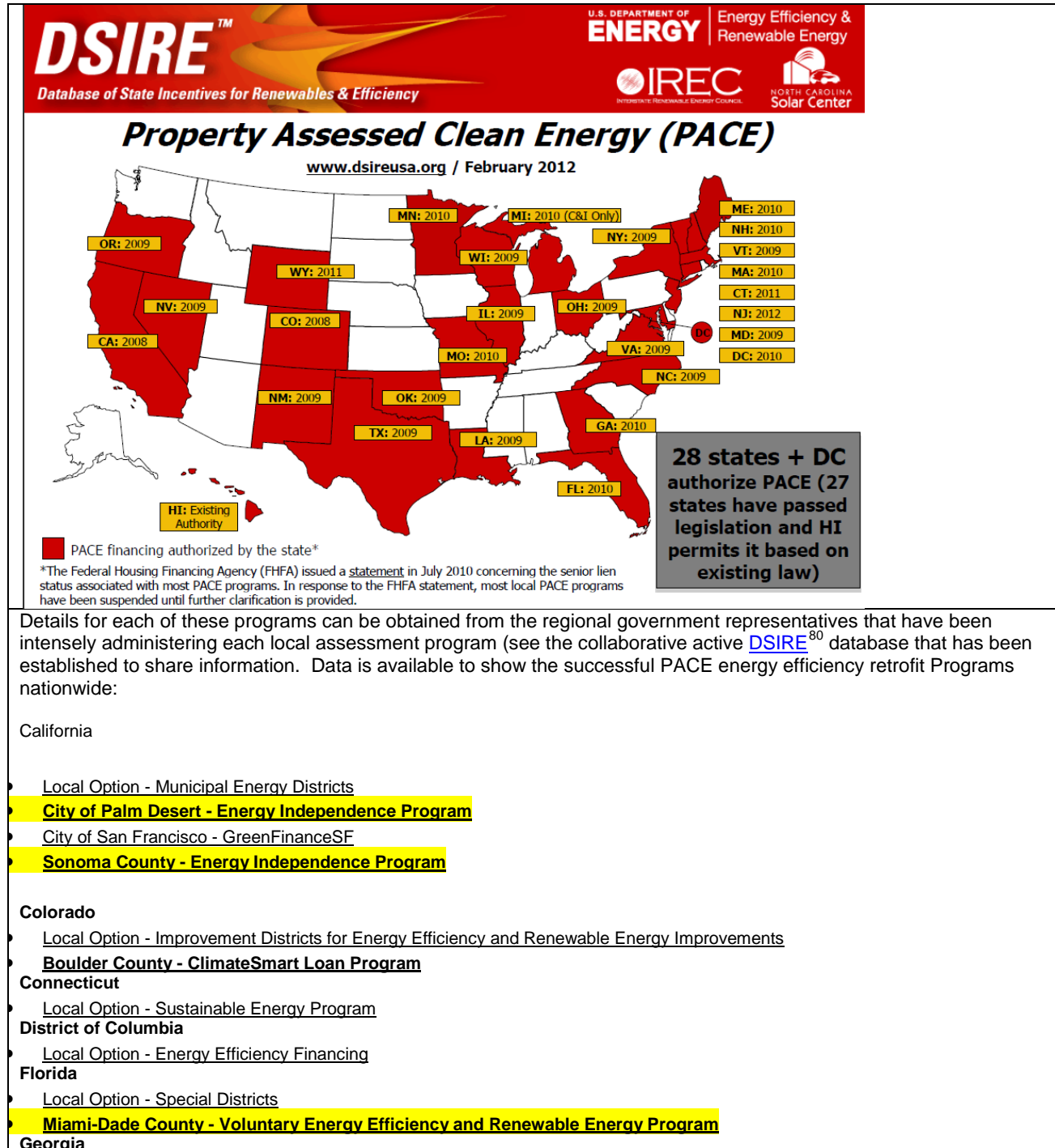
***The climate gap means that communities of color and the poor will breathe even dirtier air.***

*For example, five of the smoggiest cities in California also have the highest densities of people of color and low-income residents. These communities are projected to suffer from the largest increase in smog associated with climate change. The climate gap means that communities of color and the poor will pay more for basic necessities. Low-income and minority families already spend as much as 25 percent of their entire income on just food, electricity and water—much more than most Americans.*

***The climate gap is likely to mean fewer job opportunities for communities of color and the poor.***

*The climate crisis may dramatically reduce or shift job opportunities in sectors such as agriculture and tourism, which predominantly employ low-income Americans and people of color.*

## APPENDIX 3 : US PACE PROGRAM information includes links to data and legislation





<ul style="list-style-type: none"> <li>• <a href="#">Local Option - Special Improvement Districts</a></li> <li><b>Hawaii</b></li> <li>• <a href="#">Local Option - Special Improvement Districts</a></li> <li><b>Illinois</b></li> <li>• <a href="#">Local Option - Contractual Assessments for Renewable Energy and/or Energy Efficiency</a></li> <li><b>Louisiana</b></li> <li>• <a href="#">Local Option - Sustainable Energy Financing Districts</a></li> <li><b>Maine</b></li> <li>• <a href="#">Local Option - Property Assessed Clean Energy</a></li> <li>• <b><a href="#">Maine PACE Loans</a></b></li> <li><b>Maryland</b></li> <li>• <a href="#">Local Option - Clean Energy Loan Program</a></li> <li><b>Massachusetts</b></li> <li>• <a href="#">Local Option - Energy Revolving Loan Fund</a></li> <li><b>Michigan</b></li> <li>• <b><a href="#">City of Ann Arbor - PACE Financing</a></b></li> <li>• <a href="#">Local Option - Property Assessed Clean Energy</a></li> <li><b>Minnesota</b></li> <li>• <a href="#">Local Option - Energy Improvement Financing Programs</a></li> <li><b>Missouri</b></li> <li>• <a href="#">Jefferson City - Property Assessed Clean Energy</a></li> <li>• <a href="#">Local Option - Clean Energy Development Boards</a></li> <li><b>Nevada</b></li> <li>• <a href="#">Local Option - Special Improvement Districts</a></li> <li><b>New Hampshire</b></li> <li>• <a href="#">Local Option - Energy Efficiency &amp; Clean Energy Districts</a></li> <li><b>New Jersey</b></li> <li>• <a href="#">New Jersey Property Assessed Clean Energy Municipal Financing Program</a></li> <li><b>New Mexico</b></li> <li>• <a href="#">Local Option - Renewable Energy Financing District/Solar Energy Improvement Special Assessments</a></li> <li><b>New York</b></li> <li>• <a href="#">Local Option - Municipal Sustainable Energy Programs</a></li> <li>• <b><a href="#">Town of Babylon - Long Island Green Homes Program</a></b></li> <li><b>North Carolina</b></li> <li>• <a href="#">Local Option - Clean Energy Financing</a></li> <li><b>Ohio</b></li> <li>• <a href="#">Local Option - Special Energy Improvement Districts</a></li> <li><b>Oklahoma</b></li> <li>• <a href="#">Local Option - County Energy District Authority</a></li> <li><b>Oregon</b></li> <li>• <a href="#">Local Option - Local Improvement Districts</a></li> <li><b>Texas</b></li> <li>• <a href="#">Local Option - Contractual Assessments for Energy Efficient Improvements</a></li> <li><b>Vermont</b></li> <li>• <b><a href="#">Local Option - Property Assessed Clean Energy</a></b></li> <li><b>Virginia</b></li> <li>• <a href="#">Local Option - Clean Energy Financing</a></li> <li><b>Wisconsin</b></li> <li>• <a href="#">Local Option - Energy-Efficiency Improvement Loans</a></li> <li>• <b><a href="#">River Falls Municipal Utilities - Renewable Energy Finance Program</a></b></li> <li><b>Wyoming</b></li> </ul>
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Links to States and Municipalities with PACE Enabling Legislation

[PACE Legislation Table \(2-10-10\)](#)

[DDatabase of State Incentives for Renewables & Efficiency](#)  
[California: PACE State Enabling Legislation \(AB 811\); \(AB 474\); \(SB 279\)](#)  
[City of Berkeley PACE Program](#)  
[Fresno CA Adopts PACE Commercial \(12-16-10\)](#)  
[Palm Desert PACE Program](#)  
[San Diego County PACE Program](#)

[San Francisco "GreenFinanceSF" \(4-8-10\);: "GreenFinanceSF Project List" \(2-25-10\)](#)  
[City of Tulare CA PACE \(April 2010\)](#)  
[Western Riverside County – Energy Efficiency and Water Conservation Program](#)  
[Colorado: PACE State Enabling Legislation \(HB 08-1350\)](#)  
[Boulder County PACE Program](#)  
[Illinois: PACE State Enabling Legislation \(SB 583\)](#)  
[Louisiana: PACE State Enabling Legislation \(SB 224\)](#)  
[Annapolis PACE Program](#)  
[Montgomery County PACE Program](#)  
[Michigan: \(HB5640\)](#)  
[Missouri: PACE State Enabling Legislation \(SHB 1692\)](#)  
[Missouri – PACE Best Practices – Implementing PACE in Missouri](#)  
[Nevada: PACE State Enabling Legislation \(SB 358\)](#)  
[New Hampshire: PACE State Enabling Legislation \(HB 1554\)](#)  
[New Mexico: PACE State Enabling Legislation \(HB 572\)](#)  
[New York State General Municipal Law Article 5-L](#)  
[New York State Town Law Section 209-i \(carbon waste mitigation districts\)](#)  
[NY Statewide PACE Legislation \(may need revision for cities and counties\)](#)  
[Town of Babylon: Long Island Green Homes](#)  
[Town of Bedford, NY Home Rule Legislation Chap 336 NYS LAWS of 2009](#)  
[City of Binghamton PACE Program \(5867-A\); \(A08890\)](#)  
[North Carolina \(Note: Law needs to be amended as it requires revolving loan\) \(HB 1389\)](#)  
[Ohio: \(HB 1\)](#)  
[Ohio law firm Bricker & Eckler LLP memo on PACE in Ohio](#)  
[Oklahoma: \(SB 668\)](#)  
[Oregon PACE Legislation](#)  
[Texas: PACE State Enabling Legislation \(HB 1391\); \(HB 1937\)](#)  
[Vermont: PACE State Enabling Legislation \(H 446\)](#)  
[Virginia: PACE State Enabling Legislation \(SB 1212\)](#)  
[Wisconsin: AB 255](#)  
[Wyoming HB 0179 3-2011](#)  
[Florida: CS/HB 7179](#)  
[Florida: Statues 2011, Title XI, Chapter 163](#)  
[New Jersey: P.L.2011, CHAPTER 187](#)  
[States with PACE Enabling Legislation in Process](#)  
[Arizona: PACE State Enabling Legislation \(HB 2335\)](#)  
[Michigan: House Bill 5508 \(2012\)](#)  
[Connecticut: \(Raised Bill 5465 – Section 5\)](#)  
[Florida: Proposed PACE State Enabling Legislation \(Precourt/Hasner Press Release\)](#)

PACE programs in the US have been a success in progress of deploying residential energy efficiency retrofits. Those in bold and highlighted in yellow have deployed formal active PACE programs. These public programs have each collected data and developed sound methodologies and consumer protections to protect each of the local communities assets. Because these programs are in the public sector, the program information is available by public records request upon submission including data on the property size and region, a description of the energy efficiency retrofit approved, cost, and reports of default. Consistently reported default rates have been found to be less than 1%. There is no substantiated data showing that there have been any measured significant default indicators.

## Appendix Y

Sam Daley-Harris the director of the Microcredit Summit Campaign, and the just launched Center for Citizen Empowerment and Transformation is an expert in managing risk. The Microcredit Summit Campaign has brought micro-credit for self-employment and other financial and business services to more than 100 million of the world's poorest families, especially women.

*“The dreams of our clients—regular meals for the entire family, a home that provides shelter from the cold and rain, an education that gives children a chance to live a better life than their parents—these are things that many of us take for granted. But, for over a billion people around the world, these basic elements remain dreams rather than realities. Our dream is to see microfinance become an ever more powerful tool for helping our clients achieve theirs.”*

...Sometimes misfortune drags clients down and sometimes clients make decisions that leave them overextended. But, as we've seen throughout the report, MFIs share in the responsibility for the success and failure of their clients. And MFIs are not lone actors in this: investors, donors, government officials, networks, and advocates, all have to provide incentives that encourage MFIs to put their clients first. Working together, we can normalize client protection principles, set universal standards for social performance, and then, for those who share that vision, push the limits of innovation toward an aspirational model of microfinance for poverty outreach and transformation.” [State of the Microcredit Summit Campaign Report 2012](#)<sup>81</sup>

## References:

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- 1 <http://pacenow.org/blog/wp-content/uploads/2010-07-06-FHAF-Statement.pdf>
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<sup>46</sup> <http://newscenter.lbl.gov/feature-stories/2010/03/09/the-rosenfeld-unit-of-energy-efficiency/>, Arthur Rosenfeld, the “Godfather of energy efficiency” who Richard Muller describes, “I believe Art Rosenfeld deserves the Nobel Peace Prize more than many people who’ve received it,” Muller said. “Energy conservation has prevented conflict around the world.”

Koomey, Muller and 52 other co-authors representing 26 institutions from around the world, including more than a dozen from Berkeley Lab a group of scientists in a refereed article in Environmental Research Letters defined **the Rosenfeld** as electricity savings of 3 billion kilowatt-hours per year, the amount needed to replace the annual generation of a 500 megawatt coal-fired power plant. That definition, explains lead author Jonathan Koomey, a Lawrence Berkeley National Laboratory (Berkeley Lab) scientist and consulting professor at Stanford University who was once a graduate student of Rosenfeld’s, is classic Rosenfeld. “Power plants are what Art uses most often to explain to policy makers how much electricity can be saved by efficiency investments,”.

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<sup>55</sup> <http://www.reading.ac.uk/rep/fulltxt/0709.pdf>

<sup>56</sup> [http://www.nap.edu/catalog.php?record\\_id=13360#description](http://www.nap.edu/catalog.php?record_id=13360#description)

<sup>57</sup> The Residential Energy Consumption Survey (RECS) conducted by the Energy Information Administration (EIA) are the most relevant sources of data available to researchers and policy makers on energy consumption in the commercial and residential sectors. Residential Sector Energy Consumption Estimates, 1949– 2010  
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<sup>59</sup> <http://natcapsolutions.org/Alaska/COMPLETE-REELinAlaskaRoadmap.pdf>

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