FLORIDA PACE FUNDING AGENCY

Submitted: March 26, 2012

BY FEDERAL eRULEMAKING and EMAIL

Alfred M. Pollard, General Counsel
ATTN: Comments/RIN 2590-AA53
Federal Housing Finance Agency
Eighth Floor
400 Seventh Street SW
Washington, DC 20024

Re: RIN 2590-AA53
Advanced Notice of Proposed Rulemaking ("ANPR") Concerning Mortgage Assets Affected by PACE Programs

Dear Mr. Pollard:

On behalf of the Florida PACE Funding Agency ("Agency"), the undersigned submits the Agency's comments on whether the restrictions and conditions set forth in the July 6, 2010 statement ("Statement") issued by the Federal Housing Finance Agency ("FHFA") and the letter directive issued by FHFA on February 28, 2011 ("Directive") should be maintained, changed or eliminated, and whether other restrictions or conditions should be imposed.

The Agency asserts that the restrictions and conditions in the Directive and the Statements should be completely eliminated with respect to the Property Assessed Clean Energy Program in Florida ("Florida PACE Program") that has been established under Florida law by statute and statutorily authorized to be implemented by interlocal agreement among local governments in Florida. Elimination of the restrictions and conditions is warranted

because the operation of the Florida PACE Program does not in any way reduce the value of Fannie Mae and Freddie Mac (collectively the "Enterprises") assets that are being regulated by FHFA or in any way interfere with FHFA's mandate to preserve and conserve the assets of the Enterprises. Furthermore, the Florida PACE Program, as discussed in subsequent sections, does not "present significant risk[s] to certain assets and property of the Enterprises – mortgages and mortgage related assets"; nor does the Florida PACE Program "pose unusual and difficult risk management challenges" as asserted by FHFA in its Directive.

Consequently, the Directive's present admonition to the Enterprises to "continue to refrain from purchasing mortgage loans secured by properties with outstanding first-lien PACE obligations" is unnecessary and unwarranted for Florida mortgages where the underlying real property is subject to non-ad valorem assessments imposed by or on behalf of a local government pursuant to the Florida PACE Program.

The Agency's position will be discussed in three sections: (1) Introduction to Florida PACE and the Florida PACE Funding Agency; (2) General Comments and (3) Agency's Responses to Specific Questions posed by FHFA in its January 26, 2012 Advance Notice of Proposed Rulemaking ("ANPR") and Notice of Intent to prepare an environmental impact statement ("NOI"). Please note an invitation to begin an informal dialogue with the Agency is provided at the conclusion of the third section.

I. Introduction to Florida PACE and the Florida PACE Funding Agency

A. Florida PACE Program - The Florida PACE Program was created by the Florida Legislature in 2010 by the enactment of section 163.08, Florida Statutes (sometimes referred to as the "Florida PACE Program" or the "Florida PACE Act"). Section 163.08 provided express general law authority and subsumed effective, existing, well settled, and well known constitutional, statutory and case law authorizing local governments to use special or non-ad valorem assessments to fund and finance qualifying improvements to real property. Section 163.08 provided and clarified a thoughtful and well-reasoned grant of supplemental legal

authority encouraging cities and counties to make available the levy of special or non-ad valorem assessments to finance these needed and defined "qualifying improvements."[1] Other provisions of section 163.08 articulate the public purpose and compelling need for qualifying improvements, impose obligations on property owners seeking financing, provide carefully crafted minimum statutory underwriting requirements for property owners who find the Florida PACE Program attractive, and provide the narrow legal framework for local governments to impose assessments and enter into agreements to create a statewide agency to administer Florida PACE.

1. Legislative Findings - Section 163.08 sets out the following legislative findings that directly support Florida PACE Program, namely:

- All energy-consuming-improved properties that are not using energy conservation strategies contribute to the burden affect all improved property resulting from fossil fuel energy production.
- Improved property that has been retrofitted with energy-related qualifying improvements receives the special benefit of alleviating the property's burden from energy consumption.
- Installation and operation of qualifying improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the state's energy mitigation policies.
- There is a compelling state interest in enabling property owners to voluntarily finance such improvements with local government assistance.

[1] Qualifying improvements defined in section 163.08 are limited and include (i) energy conservation and efficiency improvements, (ii) renewable energy improvements, and (iii) wind resistance qualifying improvements that are designed to mitigate against hurricane damage, which is an annual treat in Florida. The authority for wind resistance qualifying improvements is notable in that the primary insurer of property in coastal areas of Florida is Citizens Property Insurance Corporation, which has recently imposed inspection and improvement requirements as a condition to obtaining insurance.

- The Legislature determines that the actions authorized under section 163.08, including but not limited to the financing of qualifying improvements through execution of financing agreements and the related imposition of voluntary assessments are reasonable and necessary to serve and achieve a compelling state interest and are necessary for the prosperity and welfare of the state and its property owners and inhabitants.

A copy of section 163.08, Florida Statutes (2011), is included as Exhibit A to the Agency's comments.

These findings justify the legislative grant of power to local governments (defined as a county, a municipality or a dependent special district under Florida law) to levy non-ad valorem assessments[2] to fund and finance defined "qualified improvements." What these findings do not say expressly, but clearly recognize by implication, is that the mortgage marketplace – including the Enterprises – is ineffective, unable and really not interested in addressing the environmental and other concerns of the compelling state interests addressed in the Florida PACE Act.

2. Qualified Improvements – Florida PACE legislation defines three categories of improvements: (1) Energy Conservation and Efficiency Improvements; (2) Renewable Energy Improvements; and (3) Wind Resistance Improvements. Each of these categories is illustrated by examples without limiting the definition to the listed examples.

The first category, Energy Conservation and Efficiency Improvements, is defined as measures to "reduce consumption through conservation or a more efficient use of electricity, natural gas, propane or to other forms of energy on the property" including but not limited to:

[2] Non-ad valorem assessments are special assessments and are defined in section 197.3632(1)(d), Florida Statutes, and constitute a lien against affected property, including homestead property, as permitted by Article X, Section 4, of the Florida Constitution. The only means of collection is on the same bill as for property taxes.

- Air sealing;
- Installation of insulation;
- Installation of energy efficient heating cooling or ventilation systems;
- Building modification to increase the use of daylight;
- Replacement of windows;
- Installation of energy controls or energy recovery systems;
- Installation of electric vehicle charging equipment; and
- Installation of efficient lighting equipment.

The second category, Renewable Energy Improvements, is defined as the installation of any system in which the electrical, mechanical or thermal energy is produced from a method using one or more of the following fuels or energy sources:

- Hydrogen
- Solar Energy
- Geothermal Energy
- Bioenergy and
- Wind Energy.

The third category, Wind Resistance Improvements, includes, but is not limited to, the following:

- Improving the strength of the roof deck attachment;
- Creating a secondary water barrier to prevent water intrusion;
- Installing wind resistant shingle;
- Installing gable-end bracing;
- Reinforcing roof-to-wall connections;
- Installing storm shutters; or
- Installing opening protections.

Section 163.08 (2)(b), Florida Statutes (2011).

3. Financing Agreements Between Real Property Owner and Local Government – The documentational core of the Florida PACE Program and the source of the protections it provides lenders like the Enterprises is the recorded financing agreement between the local government and the real property owner. This agreement cannot be executed until the following prequalification steps required by Florida statutory law[3] have been taken. First, the local government must reasonably determine that all property taxes and any other assessments

[3] These criteria are statewide criteria for all real property owners in Florida. This statewide applicability, *inter alia*, ensures uniformity among all financing agreements and dictates recording in the land records as a condition of validity.

levied on the tax bill as property taxes are paid and have not been delinquent for the preceding three (3) years or the property owner's period of ownership, whichever is less. The local government must also reasonably determine that there are no involuntary liens on the property, including, but not limited to, construction liens. There must be no notices of default or other evidence of property-based debt delinquency recorded during the preceding three (3) years or the property owner's period of ownership, whichever is less. Finally, the property owner who wants to participate under the Florida PACE Program must be current on all mortgage debt on the property. Section 163.08(9), Florida Statutes.

In addition to these prequalification requirements, Florida law places an aggregate cap on the amount of available Florida PACE Program funding for qualified improvements. The total amount of the assessment may not exceed 20% of the just value of the property as determined by the county property appraiser, unless another amount is consented to by the holders or loan services of the mortgage secured by the property. Section 163.08(12), Florida Statutes. This cap may be adjusted without the consent of holders or loan servicers if an energy audit demonstrates that the annual energy savings from the qualified improvements equals or exceeds the annual repayment amount of the non-ad valorem assessment.

4. Mortgage Holder or Loan Servicer Notice – Florida law requires that the property owner give not less than 30 days prior written notification to the holders or loan servicers of any existing mortgages about the owner's intent to enter into a financing agreement. This notice must disclose the maximum principal amount to be financed and the maximum annual assessment necessary to repay the amount. As a prerequisite to valid assessments, proof that this notice has been given must be provided to the local government. Section 163.08(14), Florida Statutes. It should be noted that the Florida PACE Act was passed virtually unanimously and the Florida Mortgage Bankers Association along with other market stakeholders participated substantively as the bill worked its way through the Legislature. The lenders group felt very strongly that they were fully protected by the new law through the imposition of statutory underwriting guidelines (discussed elsewhere in this response), particularly the 30 day prior

written notice provision, the concurrent ability to adjust the required mortgage escrow deposit amounts to reflect the new PACE assessment amounts, the requirement that the only means to collect the assessment was on the annual property tax bill, and that, in order to be valid, the financing agreement evidencing the assessment must be recorded in the local land records (thus providing uniformly located and constructive notice to all stakeholders).

5. Repayment of Assessment - Each financing of improvements by the local government is repaid by the property owner through assessment payments that are by law made part of the annual property tax bill. Also, by law, the property owner's mortgage escrow can be increased to include the annual assessment as part of the real property owner's monthly mortgage payment, which effectively converts the annual cost to a monthly cost. Indeed, the requirement for the prior 30 day notice to the mortgage holder or loan servicer was specifically required in order to facilitate and document any desired escrow payment amount.

6. Effect of Notice to Mortgage Holder or Loan Servicer – Section 163.08 states that any acceleration clause in an agreement binding upon the property owner is not enforceable if the acceleration is demanded solely as a result of the real property owner entering into a PACE financing agreement. The holder or loan servicer is, however, permitted by law to increase the required monthly escrow by an amount necessary to annually pay the qualifying improvement assessment.

7. Mandatory Notice to Prospective Purchaser – The seller of real property subject to the PACE assessment with an unpaid balance due shall provide the prospective purchaser with a written disclosure statement in the following form which is set out in section 163.08(14).

> QUALIFYING IMPROVEMENTS FOR ENERGY EFFICIENCY, RENEWABLE ENERGY, OR WIND RESISTANCE – The property being purchased is located within the jurisdiction of a local government that has placed an assessment on the property pursuant to §163.08, Florida Statutes. The assessment is for a qualifying improvement to the property relating to energy efficiency, renewable energy, or wind resistance, and is not based

> on the value of the property. You are encouraged to contact the county property appraiser's office to learn more about this and other assessments that may be provided by law.

This disclosure statement puts the purchaser on notice that there is an assessment on the Property for qualifying improvements and encourages the prospective purchaser to contact the county property appraiser's office to learn more about the assessment. This is in addition to the requirement that the financing agreement itself must be recorded in the county where the property is located within five (5) days after the execution of the financing agreement. Section 163.08 (8). The recorded financing agreement is deemed by statute to provide constructive notice that there is an assessment on the property and that the assessment constitutes a lien of equal dignity to county taxes and assessments from the date the agreement is recorded. *Id.*

B. Florida PACE Funding Agency – One of the features of Florida PACE legislation, which the Agency believes is only found in the Florida PACE Program, is that the legislation confirms Florida local government's ability to enter into a partnership with one or more local governments "for the purpose of providing and financing qualifying improvements." Section 163.08(5), Florida Statutes. Furthermore, this partnership of cooperating local governments is authorized to be administered by a for-profit entity or a not-for-profit entity. Section 163.08(6), Florida Statutes. As a result, Florida statutory law paves the way for creating a clearinghouse or consortium of local governments whose PACE assessments can be enveloped into a uniform and scalable program efficiently administered by a focused third party.

As a direct result of this enabling legislation, the Florida PACE Funding Agency was created in June 2011 through an interlocal agreement or partnership between Flagler County and the City of Kissimmee. Once the Agency was established, it can now operate anywhere in Florida where a local government decides to join the Agency through a process known as subscription. The interlocal agreement between Flagler County and City of Kissimmee creating the charter for Florida PACE Funding Agency is expressly authorized under Florida law[4] and is

[4] Section 163.01(7)(g), Florida Statutes.

attached to the Agency's comments as Exhibit B. This subscription methodology is a mechanism to create markets for the qualified improvements with little or no cost to local government treasuries, while at the same time assuring the transparency and accountability required of a local governmental entity in Florida. These two incorporating local governments seek no profit or ongoing recompense in their role as incorporators.

The Agency was created with the goal of establishing and using statewide standards and procedures to implement the framework in section 163.08 for the benefit of both property owners and vendors. The Agency is fully aware that its constituency is local governments. According to the interlocal agreement forming the Agency, the Agency's specific mission is to facilitate the implementation, planning, development, funding, financing, marketing and management of a uniform statewide platform so that counties and cities can easily and economically take advantage of a uniform and scalable program for their constituents.

How Does the Agency Work? As a duly formed separate legal entity under Florida law, the Agency is empowered to issue bonds to raise revenue. The Agency's bonds are issued on an as-needed basis to underwrite the qualified improvements. The bonds are sold in the market like any other municipal bond, thereby generating revenue that the Agency uses to pay for the qualified improvements on its subscribers' property owners improved property that enter into financing agreements described above. The bond proceeds are repaid by the property owners over time through the statutorily authorized non-ad valorem assessments on property tax bills.

The Circuit Court, in Florida PACE Funding Agency vs. State of Florida, et. al., Case No. 2011-CA-1824, issued a Final Judgment on August 25, 2011 which became final and non-appealable on September 27, 2011, in which the Court validated the issuance of up to $2,000,000,000 in debt obligations by the Florida PACE Funding Agency (the "Agency") and made various findings of fact and law (the "Final Judgment"). These findings of fact and law are now binding on all participants in the Agency's program, including subscribing local governments, participating property owners, holders of any Agency debt obligations and mortgage lenders who hold a mortgage on property subject to, or which may become subject to,

a non-ad valorem assessment levied pursuant to the Agency's program. Some of the significant points of the Final Judgment are discussed below.

a. The Agency is an independent unit of government and separate legal entity with authority to operate in either a county or city in Florida where the Agency and the local government have entered into a Subscription Agreement.

b. A subscribing local government has no liability for any actions or debt obligations undertaken by the Agency, and the sole source of payment for any liabilities or debt obligations of the Agency are non-ad valorem special assessments imposed by or on behalf of subscribing local governments pursuant to the Agency's program.

c. The Final Judgment has statewide application and enforceability, and is binding on all parties with an interest in the Agency's program wherever the Agency's program operates, including all mortgage lenders. The benefits of the Final Judgment inure solely to the Agency, its subscribers, and participants in its program and not to other similar programs.

d. The Final Judgment recognizes that the special assessments levied pursuant to the Agency's program are of equal dignity with all other non-ad valorem special assessments levied by local governments as envisioned by the Florida Constitution, and as such constitutes a valid and enforceable lien permitted by Article X, Section 4 of the Florida Constitution, of equal dignity to taxes and other non-ad valorem assessments and is paramount to all other titles, liens or mortgages not otherwise on parity with the lien for taxes and non-ad valorem assessments, which lien runs with, touches and concerns the affected property.

e. The Final Judgment also expressly recognizes that each of the assessments levied pursuant to the Agency's program and evidenced by a recorded financing agreement are duly authorized and constitute valid and enforceable governmental assessments on the subject property.

f. The Final Judgment also confirmed the validity of the state law which renders unenforceable any provision in any agreement between a mortgagee or other lienholder and a property owner which allows for the acceleration of payment of a mortgage, note, lien or other unilateral modification solely as a result of the property owner entering into a financing agreement pursuant to the Agency's program which establishes a non-ad valorem assessment. As a result, these provisions in any mortgage or related document may not be used by the mortgage lender as the basis to declare a default or acceleration of the mortgage lien should the mortgagor elect to participate in the Agency's energy conservation, renewable energy or wind resistance improvements program and have a non-ad valorem assessment imposed on the mortgaged property.

g. Provisions in a franchise agreement between a subscribing local government and a public or private electric utility provider which seek to limit the local government's ability to encourage or participate in energy conservation programs or alternative energy programs were also confirmed as not enforceable to prevent the local government from subscribing to the Agency's program.

What is the effect of a Bond Validation Judgment in Florida? Section 75.06(1), Florida Statutes, requires the clerk of court to publish a copy of the order to show cause at least once each week for two consecutive weeks in a newspaper published in the territory affected by the issuance of the bonds. With respect to the Florida PACE Funding Agency, noticed was duly published in four counties – Flagler County, Leon County, Osceola County and Pinellas County, Florida. "By this publication *all* property owners, taxpayers, citizens, *and others having or claiming any right, title or interest in the county, municipality or district, or the taxable property therein*, are made parties defendant to the action and the court has jurisdiction of them to the same extent as if named as defendants in the complaint and personally served with process." § 75.06(1), Fla. Stat. (2010) (emphasis added). The final judgment validating the bonds is "forever conclusive as to all matters adjudicated against . . . *all parties affected thereby, including all property*

owners, taxpayers and citizens of the plaintiff, and all others having or claiming any right, title or interest in property to be affected by the issuance of said bonds . . . or to be affected in any way thereby . . . ." § 75.09, Fla. Stat. (2010) (emphasis added).

Are Procedural Due Process issues associated with a Florida bond validation? The Florida Supreme Court has expressly held that the constructive service of process by publication established by Chapter 75, Florida Statutes, satisfies the due process requirements of the Florida and United States Constitutions. *See Keys Citizens for Responsible Gov't, Inc. v. Fla. Keys Aqueduct Auth.*, 795 So. 2d 940 (Fla. 2001). *See also Jackson v. Waller Independent Sch. Dist.*, 625 F. Supp. 2d 357 (9th Cir. 2008) (describes in-depth the importance of the preclusive effects of bond validation judgments). The purpose of constructive service statutes is to give a nonresident an opportunity to come into court and defend the suit against him or her within the time specified in the order to appear. *Seiton v. Miami Roofing & Sheet Metal*, 10 So. 2d 428 (Fla. 1942). Statutes authorizing service by publication must provide for sufficient notice of the action to be fair to the defendants and to satisfy the due process requirements of the state and federal constitutions. *Gribbel v. Henderson*, 10 So. 2d 734 (Fla. 1942).

As the Florida Supreme Court in *Keys Citizens for Responsible Government* explained, procedural due process requires both notice and an opportunity to be heard. *Keys Citizens for Responsible Gov't*, 795 So. 2d at 948. The notice must be "reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections. The notice must be of such nature as reasonably to convey the required information, and it must afford a reasonable time for those interested to make their appearance." *Mullane v. Central Hanover Bank & Trust Co.*, 339 U.S. 306, 314 (1950). The Florida Supreme Court has concluded that the constructive service of process by publication for a bond validation satisfied the requirements of due process of law. *Keys Citizens for Responsible Gov't*, 795 So. 2d at 948.

***Who are Interested Parties*?** An interested person, for purposes of chapter 75, Florida Statutes, "is anyone who has a justiciable interest in a bond validation proceeding because he or she stands to gain or lose something as a direct result of the bond issuance." *Rich v. State*, 663 So. 2d 1321, 1324 (Fla. 1995).

In *Rich*, a group of residents of a nearby village filed a motion to intervene in a bond validation proceeding. *Id.* at 1323. The group of residents did not own property within the district, but only paid contractual fees for use of the facilities being purchased by the bonds. *Id.* These fees will be used to repay the bonds. *Id.* The Florida Supreme Court held this group of residents was not an interested person capable of intervening in a bond validation. *Id.* at 1324. While the group of residents may be "affected" by the issuance of the bonds, they are not "adversely" affected because they will be in the same position after the issuance as before the issuance. *Id.* The group of resident's only interest extends from the contractual rights, which are not changed by the validation of the bonds. *Id.*

The Agency recognized that some mortgage lenders making or holding loans on Florida property may have viewed themselves as potentially adversely affected by the issuance of the bonds; notwithstanding that, it is and has been for over a century, well settled law that the priority of a security interest in a mortgage and other contractual rights are subordinate to the levy of special assessments and the subsequent issuance of the bonds. The unmistakable purpose of the Florida PACE Act is to encourage the careful use of assessments that will have priority to those of mortgage holder's interests in a manner indistinguishable from all other governmental assessments. Moreover, a mortgage lender probably did not have to use section 75.07, Florida Statutes, to intervene in the bond validation. They are probably party defendants under section 75.06, as they claim a right, title and interest in the property, much the same way a citizen and taxpayer does. However, the Florida Supreme Court has interpreted the terms "taxpayer" and "citizen" to require a similar adversely affected or justiciable interest requirement. No party chose intervene in the proceeding.

Federal Constitutional Issues: Once it becomes final, a decree validating a proposed bond issue puts at rest all questions which were raised in the validation as well as questions which could have been raised. *Lipford v. Harris*, 212 So. 2d 766 (Fla. 1968). Chapter 75, Florida Statutes, provides that a final judgment in bond validation proceeding is conclusive as to all matters adjudicated, if judgment validates bonds and no appeal is taken within time limits, precludes re-litigation only on narrow issues appropriate to a bond validation proceeding and had no bearing on issues ruled to have been collateral and not heard at bond validation proceeding. *Warner Cable Commn'c, Inc. v. City of Niceville*, 581 So. 2d 1352 (Fla. 1st DCA 1991). However, if resolution or proceedings on which municipal bonds are based conflicts with organic law, rule of repose, based on decree validating them, does not apply. *City of Ft. Myers v. State*, 117 So. 97 (Fla. 1928). Judicial decree of validation of town's bonds before their sale estopped town, its taxpayers and citizens from ever attacking their validity, except perhaps on constitutional grounds. *U.S. ex rel. Horigan v. Heyward*, 98 F.2d 433 (5th Cir. 1938); *see also Wright v. City of Anna Maria*, 34 So. 2d 737 (Fla. 1948) (this statute conclusively adjudicates the validity of duly authorized bonds and certificates as issued, unless it appears by statute, by bonds or certificates, by record of validating proceedings, or by proceedings required for issuance of bonds, that some expressed or implied command, prohibition or limitation of Constitution was violated in validating or issuing the bonds); *State v. Town of Belleair*, 170 So. 434 (Fla. 1936) (where questions of constitutional validity of municipal bonds are not raised and settled in validation proceeding, questions may be later availed of as a defense).

However, a federal court in Texas has recently held that taxpayers were barred by res judicata from challenging the validity of bonds in federal court where the state court issued a final judgment arising out of the same subject matter and involving the same parties where the taxpayers could have brought the federal constitutional claims in state court, but chose not to do so. *Jackson v. Waller Independent Sch. Dist.*, 625 F. Supp. 2d 357 (S.D. Texas 2008). In this case, the court held that a federal court must give a state-court judgment the same preclusive effect as that judgment would have under the law of the state in which the judgment was rendered. *Id.*

at 364. The court in *Jackson* suggests that even if the federal constitutional issues are not heard, a validation judgment may preclude those issues being raised in a subsequent proceeding if the court did not refuse to hear those issues. *Id.* at 367. In other words, if the issues were raised, but the court refused to hear them as collateral issues, they could be raised in a subsequent proceeding. However, if the issues were not raised, they could be treated as being waived by the parties and the validation judgment would be conclusive as to those issues. So, if federal constitutional issues are able to be raised in a Florida bond validation proceeding and are voluntarily not raised, a mortgage lender or guarantor would be unable to raise those issues in a subsequent federal proceeding.

What Are the Advantages of the Agency? The Agency maintains that its unique platform will allow local governments in Florida of varying size and resources to access capital markets without having to implement or deploy individual programs or individually seek capital for their constituents. Through the delivery of a single, statewide, uniform program, certainty is provided to local governments, property owners, vendors and mortgage lenders. In addition, the statewide platform the Agency offers is designed to take advantage of efficiencies and economies of scale in order to deliver the most cost effective program possible.

The Agency also believes that its centralized administration provides efficiencies and cost savings, while fostering partnerships with commercial and industrial groups, educators, energy auditors, contractors, suppliers and installers. In a nutshell, the Agency's implementation of the Florida PACE Program facilitates the creation of local, private sector job engines while at the same time providing a uniform approach to financing that will address any concerns voiced by the Enterprises about adverse impact on mortgage assets as well as the concerns of the Legislature articulated in the Florida PACE Act.

Mr. Pollard, beyond these comments and separate and apart from the process in which they are submitted, the Agency seeks a direct dialogue with you as it relates to the Agency's implementation of the Florida PACE Program (emphasis supplied). Please see, in particular, Section III hereof, Agency's Response to Specific Questions Posed by FHFA, item F, Invitation

to FHFA from the Florida PACE Funding Agency to Establish an Immediate and Meaningful Dialogue at the end of the body of this correspondence.

II. General Comments

The following comments from the Agency address general points made by the FHFA in the preamble to the ANPR and NOI.

General Comment No. 1 - Part C of the ANPR states that according to FHFA, "such legislation [PACE] leaves most program implementation and standards to local government bodies and provides no uniform requirements or enforcement mechanisms."

Florida PACE Funding Agency's to General Comment No. 1 – The Florida PACE Program as administered by the Florida PACE Agency provides program implementation and standards that are uniform by general law and will apply requirements and enforcement mechanisms on a statewide platform. While the Agency does not dispute that PACE legislation in other states might be correctly characterized by this statement, it is not a correct characterization of the Florida PACE Program and cannot be used as a basis to apply the restrictions of the Statement and the Directive to the Enterprises' purchase of mortgage assets in Florida.

General Comment No. 2 – Part C of the ANPR states that according to FHFA, "[t]he mortgage holder is also at risk in the event of a foreclosure for any diminution in the value of the property caused by the outstanding lien or the retrofit project, which may or may not be attractive to potential purchasers."

Florida PACE Funding Agency's to General Comment No. 2 – FHFA's statement regarding the possibility of diminution in value of property is purely speculative and not supported by any evidence in the ANPR. To the contrary, university level studies have clearly demonstrated that the types of improvements offered through a PACE program result in noticeable increases in a property fair market value or fair rental value. See: University of

California Energy Institute, *Doing Well by Doing Good? Green Office Buildings*, by Piet Eichholtz, Nils Kok and John M. Quigly, December 2010 [copy attached as Exhibit D hereto], and *Certified Home Performance: Assessing the Market Impacts of Third Party Certification on Residential Properties*, by Ann Griffin, Earth Advantage Institute, May, 2009 [copy attached as Exhibit E hereto]. See also: *Evidence of Rational Market Valuations for Home Energy Efficiency*, by Rick Nevin and Gregory Watson, October 1998 [copy attached as Exhibit F hereto].

General Comment No. 3 – Part C of the ANPR states that according to FHFA, "…the homeowner's assumption of this new obligation may itself increase the risk that the homeowner will become delinquent or default on the other financial obligations, including any mortgage obligations."

Florida PACE Funding Agency's to General Comment No. 3 – FHFA's statement regarding the possibility that PACE assessments may increase the risk of delinquency and default is purely speculative and not supported by any evidence in the ANPR. There is no increased risk in Florida that the assumption of the PACE assessment will increase delinquency or default because Florida general law, *inter alia,* requires the following safeguards on property owners entering into a financing agreement with the Agency or local governments in Florida: All property taxes must be paid and have not been delinquent for the preceding 3 years or property owner's period of ownership, whichever is shorter, there are no involuntary liens like construction liens, no notices of default or other evidence of property-based debt delinquency have been recorded during the preceding 3 years or period of ownership whichever is shorter; the property owner must be current on all mortgage debt on the property and the total amount of any non-ad valorem assessment may not exceed 20% of the clearly defined (and conservatively determined) "just value" of the property as shown by law on the local property appraiser's records.

In addition, many of the improvements will likely result from a need to cure deferred maintenance issues or to address the need to replace worn out equipment such as heat pumps and water heaters. Many other improvements may be necessitated by the need to obtain or

maintain property insurance on the improved property. As mentioned herein, Citizens Property Insurance Corporation, often the sole insurer for coastal property in Florida, has implemented a requirement of inspection and mandating improvements or repairs to property as a condition to obtaining property insurance (a requirement of all mortgage lenders). As a result, many of the improvements that would be financed through the levy of an assessment would need to be financed under alternative lending opportunities, or simply continue to be deferred. Most, if not all, of the alternative lending options could adversely impact the property owner, such as acceleration of repayment provisions. It is clearly in the paramount interest of the mortgage lender to insure that such deferred maintenance items or improvements to enable the property to be insured be completed in a manner least likely to cause a financial detriment to the property owner/mortgagor. Properly established PACE assessments offer the property owner and mortgagee the highest level of avoidance of delinquency and default protection over alternative financing arrangements.

General Comment No. 4 – Part C of the ANPR states that according to FHFA, "[p]roponents of PACE programs have analogized the obligations to repay PACE loans to traditional tax assessments." FHFA then concludes that the so-called "loans" are not traditional tax assessments because PACE assessments are voluntary, participating property owners control use of funds, select contractors, own the fixtures and must repair the fixtures.

Florida PACE Funding Agency's to General Comment No. 4 – Pursuant to the terms of the final judgment in the Florida PACE Agency bond validation case [*See* Paragraph Twelfth – Final Judgment - Exhibit C attached hereto], PACE assessments for qualified improvements are deemed to be traditional tax assessments under Florida law, on a Florida Constitutional par with all other government assessments and taxes levied on property. Indeed, "voluntary" assessments are fairly common in Florida. A significant number of assessments in Florida arise from communities or large landowners/developers approaching their local government and requesting that an assessment be imposed to pay for various improvements or essential services such as drainage, road extensions and beautification, extension of water and sewer lines,

burying utility lines, fire protection, garbage collection or landfill operations, or localized stormwater management. These types of improvements or essential services are often indirect, cosmetic in nature, and do not significantly increase the market value of assessed property as much as the direct improvement funded by the Florida PACE Program. To the contrary, PACE assessments provide a direct and verifiable benefit to the assessed property and have a direct impact on the market value of the assessed property. However, no issue has ever been raised by either Fannie Mae or Freddie Mac about these other "traditional" voluntary assessments.

General Comment No. 5 - Part C of the ANPR states that according to FHFA, "[n]othing in PACE requires that local governments adopt and implement nationally uniform financial underwriting standards such as minimum total loan to value ratios that take into account either: (i) total debt or other liens on the property; or (ii) the possibility of subsequent declines in the value of the property.

Florida PACE Funding Agency's to General Comment No. 5 – The Florida enabling legislation provides a thoughtful minimum set of guidelines which are required to be met before a property owner and the assessing local government can enter into a financing agreement to evidence the levy of the assessment which includes satisfaction of any due process concerns. [*See* Paragraph Eighteenth – Final Judgment – Exhibit C hereto]

The Florida PACE Act, unlike the enabling legislation in most (if not all) of the other states which authorize PACE type programs, deliberately undertook the adoption of a statutory regimen designed to protect property owners, local governments and mortgage lenders. As mentioned earlier, the legislation was passed with the participation and support of the Florida Mortgage Bankers Association and many other stakeholders scrutinizing the legislation. In addition, the Florida legislation was designed to create transparencies and mechanisms to prevent the occurrence of fraud under the program. For example, Florida law requires that all owners of an assessed property consent in writing to the levy of the assessment on the property. In addition, the law limits the amount of the assessment to 20% of the "just value" of the property, unless the mortgage holder has consented to a higher amount or an energy audit

demonstrates that the annual energy savings will equal or exceed the annual assessment amount. The use of "just value" rather than "fair market value" was a deliberate decision of the Legislature to avoid the use of inflated market value appraisals. In Florida, "just value" (a statutory concept embedded in the State's property tax laws) of property is determined by the local property appraiser each year using a statutory methodology. The property appraiser is an elected official serving as an independent Constitutional officer in each community. "Just value" is a statutory term. It is significantly lower than market value, and is the basis for determining "assessed value", the value against which property taxes are assessed. In most every case, 20% of "just value" of a property will be a fraction of similar percentage of "fair market value".

In fact, the Florida PACE Act, was drafted taking into account the guidelines of the White House Whitepaper on PACE from October, 2009, the then promulgated guidance provided by the Office of the Comptroller of the Currency, and difficulties encountered in other jurisdictions which did not provide such sound statutory guidance for PACE programs.

General Comment No. 6 – Part C of the ANPR states that according to FHFA, "[m]any PACE programs also do not employ standard personal creditworthiness requirements… although some include narrower requirements, such as that the homeowner-borrower be current on the mortgage and property taxes and do not have a recent bankruptcy history."

Florida PACE Funding Agency's to General Comment No. 6 – Florida's PACE legislation has significant personal creditworthiness requirements that go beyond "standard." These requirements include that (1) all property taxes must be paid and have not been delinquent for the preceding 3 years or property owner's period of ownership, whichever is shorter, (2) there are no involuntary liens like construction liens, (3) no notices of default or other evidence of property-based debt delinquency have been recorded during the preceding 3 years or period of ownership whichever is shorter; and (4) the property owner must be current on all mortgage debt on the property. In any event, PACE assessments should not be considered under the same guidelines one would consider in the context of a conventional

mortgage loan. Conventional mortgage loans represent personal obligations of the debtor while PACE assessments, like all other governmental assessments, are not personal obligations, but rather obligations which run with the land. Customary credit underwriting procedures for personal loans are misplaced when used in conjunction with a PACE assessment.

General Comment No. 7 – Part C of the ANPR states that according to FHFA, "[s]ome local PACE programs communicate to homeowners that incurring a PACE obligation may violate the terms of their mortgage documents."

Florida PACE Funding Agency's to General Comment No. 7 – Florida law provides that properly executed financing agreements for PACE assessments cannot be the sole trigger of an acceleration clause or other unilateral modification of the property owner's mortgage or other lienholder agreement. Section 163.08(13). The power to enact such non-acceleration provisions by general law and the case law in support thereof was verified by the Circuit Court in the Agency's bond validation judgment [*See* Exhibit C]. The Court, in ruling that the state law override of a mortgagee's ability to declare a default and accelerate the mortgage was not an infringement of the contract, determined that the financing agreements were essentially an alternative method of evidencing due process in the levying of the assessment on the affected property. Since the assessment is just like any other governmental assessment under the Florida Constitution, the undertaking of the assessment obligation would not and does not violate an existing mortgage contract under Florida law. However, the carefully crafted provisions of the Florida PACE Act do, in fact, address and protect all mortgages by and through the notice, escrow, and overall assessment cap or limitation provisions of the legislation.

General Comment No. 8 – FHFA's Statement as quoted in the ANPR says: "[f]irst liens established by PACE loans . . . are not essential for successful programs to spur energy conservation."

Florida PACE Funding Agency's to General Comment No. 8 – FHFA's position on the value of PACE programs to energy conservation lacks factual evidence or citation to studies or reports cited in the ANPR. To the contrary, under Florida law, the Florida Legislature has determined in its legislative findings in section 163.08 that there is "a compelling state interest in enabling property owners to voluntarily finance such improvements with local government assistance." (emphasis added) Furthermore, the Florida Legislature has determined that the actions authorized under section 163.08, including but not limited to the financing of qualifying improvements through execution of financing agreements and the related imposition of voluntary assessments are reasonable and necessary to serve and achieve a compelling state interest and are necessary for the prosperity and welfare of the state and its property owners and inhabitants (emphasis added). Please carefully review the Florida PACE Act. The Agency submits that FHFA cannot ignore these legislative findings when it seeks to apply its unreasonable and unjustified restrictions and conditions contained in the Statement and the Directive. *See, e.g., Strand v. Escambia County*, 992 So. 2d 150, 156 (Fla. 2008) ("legislative declarations of public purpose are presumed valid and should be considered correct unless patently erroneous") (quoting *Boschen v. City of Clearwater*, 777 So. 2d 958, 966 (Fla. 2001)); *State v. Housing Fin. Auth. of Pinellas County*, 506 So. 2d 397, 399 (Fla. 1987).

III. Agency's Responses to Specific Questions posed by FHFA in its January 26, 2012 Advance Notice of Proposed Rulemaking ("ANPR") and Notice of Intent ("NOI")

A. Conditions and Restrictions Relating to PACE

Question 1 – Are the conditions and restriction relating to FHFA-regulated entities dealing in mortgages on properties participating in PACE programs necessary? If so, what specific conditions and/or restrictions are necessary?

Florida PACE Funding Agency's Response to Question No. 1 - FHFA's Statement and Directive assert that PACE programs that provide for first-lien priority over mortgage loans present significant risks to certain assets and property of the Enterprises, as well as present

unusual and difficult risk management challenges for the Enterprises. Based on these premises, FHFA mandates that the Enterprises must refrain from purchasing mortgage loans secured by property subject to PACE assessments. These restrictions are not justified in general since they are based solely on assumptions which are not derived from fact based research, and in specific, in Florida for properties that secure PACE assessments, for all the clear and convincing evidence set forth in the discussion of the Florida PACE Program in the previous sections and herein. Most importantly, the Agency points out that Florida has adopted a statewide, uniform approach to creditworthiness, underwriting standards, eligible improvements, notice, collection and an escrow procedures, and other provisions that ensure that the assets of the Enterprises will not be at risk.

B. Financial Risk to Enterprises Resulting from Subordination of Mortgage Security Interests to PACE liens

Question No. 2 – How does the lien priming feature of first-lien PACE obligations affect the financial risk that is borne by holders of mortgages affected by PACE obligations or investors in the mortgage backed securities based on such mortgages? How and at what cost could such parties insulate themselves from such increased risk?

Florida PACE Funding Agency's Response to Question No. 2[5] – It is unquestioned that the standard terms of mortgage instruments approved by the Enterprises provide that the

[5] The Agency answer asserts that the predicate for the question is erroneous, arbitrary and capricious, as it assumes the 'lien priming feature of the first lien PACE obligations' are somehow distinguishable from all other governmental assessments. Just the contrary, in Florida, PACE assessments are indistinguishable from and fully equivalent to all other non-ad valorem assessments. See Paragraph Twelfth in the Final Judgment. The term 'lien priming' occurs in a bankruptcy setting where cash injections during reorganization are given priority or parity with prior secured lenders. The use of the term by FHFA in this context is pejorative, misleading and improper. In a bankruptcy circumstance there can be a priority struggle between contract lenders where debtor in possession financing is necessary. In a contest between a contract lender and a property tax or non-ad valorem or special assessment outside of the very narrow circumstance where 'lien priming' might occur, every mortgagor knows that its mortgage, regardless of first in time considerations, is simply not on par with the tax or assessment.

mortgage lien is subordinate to taxes and assessments, and it is undisputed that nationwide, many existing assessments are voluntary. It is important to note that such general taxes and assessments for community improvements like sewers, water, land fill operation and others do not have the same direct benefit to the assessed property that is the hallmark of PACE assessments. PACE assessments generate a direct benefit to assessed property (cost saving associated with energy efficiency, protection of property in storm events, lower insurance costs) that is coupled with a direct increase in fair market value which directly improves the lender's security for the mortgage loan. Consequently, the holders of mortgages that will be affected by PACE assessments in Florida have decreased financial risk that does not require mechanisms and costs to insulate them from risk. The Agency believes that the PACE assessment in Florida will, in and of itself, be an insulation from risk, even in a volatile housing market. FHFA simply cannot justify its restrictions and conditions in Florida on the basis of increased risk and to do so constitutes arbitrary and capricious agency action.

In addition, applicable Florida law and the Agency's form of statutorily required financing agreement will require the property owners participating in a PACE assessment to consent to an immediate adjustment in the monthly deposit to the mortgage escrow for taxes and insurance, or to the imposition of an escrow if one is not currently required, should the mortgage lender request such a change. The monthly funding of the escrow for taxes and insurance is the customary method applied by mortgage lenders, including the Enterprises, to assure that priority lien tax and assessment liens are paid on a timely basis which preserves the lenders security and first lien position under its mortgage.

Question No. 3 (1) – How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: The total amount of debt secured by the subject property relative to the value of the subject property (Combined Loan to Value Ratio for the property or other measures of leverage).

Florida PACE Funding Agency's Response to Question No. 3 (1)[6] – Under the Florida PACE Program there is an annual assessment for the property each year, without acceleration, which is the same exposure for the mortgage holder as presently exists for property taxes and all other assessments collected over a period of years. Since the PACE assessment runs with the land and is not a personal obligation of the property owner, the analysis of a combined loan to value ratio is at best misplaced, and creates confusion as to the true nature of the assessment liens. Finally, as any debt load is added, the question ignores the fact that qualifying improvements also directly add value to the property. Where the Enterprises are faced with underwriting the mortgage on a property which already has a PACE assessment, that underwriting presently does and/or should consider the annual cost of the PACE assessment in conjunction with the estimated annual taxes.

Question No. 3 (2) – How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: 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).

Florida PACE Funding Agency's Response to Question No. 3 (2)[7] – Fees and expenses for the Florida PACE Program will be lower than other programs because its structure enables it to seek the lowest cost program. This is so because as a non-profit governmental agency under Florida law, a local government (or the Agency) cannot legally seek a profit generating special assessment program for itself (or for any subscribing local government). Just as an overpriced mortgage will not attract borrowers, neither will an overpriced PACE program attract

[6] See footnote [5].
[7] See footnote [5].

participants. The question erroneously, capriciously, and arbitrarily surmises that the market will overpay for qualifying improvements that do not add value and/or create untenable debt load, and/or will render the property less valuable, thus rendering investors in mortgage-backed securities based upon such mortgages at increased risk. The Agency believes that its administrative cost will be far less than the 10% figure cited by FHFA, which citation is made without reference to underlying facts to support its figure. The administrative costs of the Florida PACE Program will be limited by existing constraints on local governments in Florida, market constraints, and priced into every non-ad valorem assessment by the property owner; and, for the foregoing and other reasons articulated herein, will not increase financial risk to the mortgage holder.

Question No. 3 (3) – How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: The timing and nature of advancements in energy-efficiency technology.

Florida PACE Funding Agency's Response to Question No. 3(3)[8] – The Florida PACE Program will unquestionably advance the development of energy efficiency technologies as it expands the market for the use of these technologies in Florida. The market forces generated by the Florida PACE Program will result in unprecedented savings for the energy efficiency improvements, as well as energy cost savings for the property owner. The Agency does not foresee any financial risk borne by holders of mortgages secured by real property subject to PACE assessments due to the timing and nature of advancements in energy efficiency technology in Florida. While it may be correct that future buyers of improved energy-efficiency technologies over time may see more energy savings than current buyers, any future increase in savings does not negate the benefits of the current savings to current buyers.

[8] See footnote [5].

Question No. 3 (4) – How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: The timing and nature of changes in potential homebuyers' preferences regarding particular kinds of energy-efficiency projects.

Florida PACE Funding Agency's Response to Question No. 3(4)[9] - The Florida PACE Program could anticipate changes in homebuyers' preferences regarding particular kinds of energy-efficiency projects over the life of the Program in the same way that the Enterprises anticipates changes in consumer preferences for types of kitchens, bathrooms and pool areas for houses secured by properties located in different parts of the country over different periods of time. The Agency does not foresee any financial risk borne by holders of mortgages secured by real property subject to PACE assessments due to those changes in preference for energy efficiency projects any more than the Enterprises have seen increased financial risk due to changes in preferences for other features of the secured property. While it may be correct that future buyers of improved energy-efficiency technologies may see more energy savings than current buyers, any future increase in savings does not negate the benefits of the current savings.

Question No. 3 (5) - How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: The timing, direction and magnitude of changes in energy prices.

Florida PACE Funding Agency's Response to Question No. 3(5)[10] – The Agency believes that the direction and magnitude of changes in energy prices are not relevant to financial risk that is borne by holders of mortgages subject to PACE assessments. This is so because the key factors in the success of PACE programs are energy cost savings to the property owner and the

[9] See footnote [5].
[10] See footnote [5].

fact that studies have shown there is an increase in fair market value for property with energy efficiency and alternative energy improvements that is independent from energy prices.

Question No. 3(6) - How does the lien priming feature of the first-lien PACE obligations affect any financial risk that is borne by the holders of mortgages affected by PACE obligations or investors in mortgage-backed securities based on such mortgages and relate to any of the following: The timing, direction, and magnitude of changes of property values, including the possibility of downward adjustments in value

Florida PACE Funding Agency's Response to Question No. 3(6)[11] - The Agency believes that the timing, direction and magnitude of changes in property values, including the possibility of downward adjustments in value, are not relevant to financial risk that is borne by holders of mortgages subject to PACE assessments. This is so because the timing, direction and magnitude of changes of property values is a risk that is always on the holder of mortgages with or without PACE assessments. Additionally, studies have shown that there is an increase in fair market value for property with energy efficiency and alternative energy improvements that is independent from timing, direction and magnitude of changes of property values due to other factors.

Question No. 4(1) – To the extent that the lien priming feature of first lien PACE obligation 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 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.

Florida PACE Funding Agency's Response to Question No. 4(1)[12, 13] – First and foremost, the Agency does not believe that the PACE assessments in Florida will increase any financial

[11] See footnote [5].
[12] See footnote [5].
[13] Please also see Agency's Response to Question No. 3(1).

risk to the holder of the mortgage or investors in mortgage backed securities. Notwithstanding this belief, the Agency states that the nature of the qualifying improvements eligible under the PACE program that increase the property's fair market value and/or render the property insurable (especially in coastal areas subject to Citizens Insurance, the state sponsored insurer of last resort) is a no-cost offset to any financial risk. Since the PACE assessments are not subject to acceleration (unlike many loans) the mortgage holder or investors in mortgage backed securities would look at each year's assessment amount, not the total principal of the assessment. Any risk is thus further mitigated through the proper sizing of the monthly tax and insurance escrow required by many mortgage holders (and expressly available under the Florida PACE Act).

Question No. 4(2) – To the extent that the lien priming feature of first lien PACE obligation 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 what cost could such parties insulate themselves from that increase in risk: 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 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).

Florida PACE Funding Agency's Response to Question No. 4(2)[14, 15] – First and foremost, the Agency does not believe that the PACE assessments in Florida will increase any financial risk to the holder of the mortgage or investors in mortgage backed securities. It is also important to understand the Agency is an independent unit of government with statewide operational authority, not a private for-profit entity. Florida law does not allow for "profits" to be generated from assessments for local governments and local governments imposing

[14] See footnote [5].

[15] Please also see Agency's Response to Question No. 3(2).

assessments are only authorized to recover costs. Additionally, the assessment can be sized to fully pay the costs of the qualifying improvements and if desired by the property owner, to capitalize the reasonable administrative costs of the assessment over time (a customary governmental practice applicable to all assessments). As a result, there is no greater risk with a PACE assessment than for any other governmental assessment that the property owner will not be able to use the assessment proceeds to pay the legitimate costs of the qualifying improvements in full.

Question No. 4(3) – To the extent that the lien priming feature of first lien PACE obligation 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 what cost could such parties insulate themselves from that increase in risk: The timing and nature of advancements in energy-efficiency technology.

Florida PACE Funding Agency's Response to Question No. 4(3)[16, 17]- First and foremost, the Agency does not believe that the PACE assessments in Florida will increase any financial risk to the holder of the mortgage or investors in mortgage backed securities. While technology advances are expected and desired, future advances do not reduce the benefit from the energy related improvements that have been already made.

Question No. 4(4) – To the extent that the lien priming feature of first lien PACE obligation 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 what cost could such parties insulate themselves from that increase in risk: The timing and nature of changes in potential homebuyer preferences regarding particular kinds of energy efficiency projects.

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[16] See footnote [5].

[17] Please also see Agency's Response to Question No. 3(3).

Florida PACE Funding Agency's Response to Question No. 4(4)[18, 19]- First and foremost, the Agency does not believe that the PACE assessments in Florida will increase any financial risk to the holder of the mortgage or investors in mortgage backed securities. The Florida PACE Program could anticipate changes in homebuyers' preferences regarding particular kinds of energy-efficiency projects over the life of the Program in the same way that the Enterprises see changes in consumer preferences for types of kitchens, bathrooms and pool areas for houses secured by properties located in different parts of the country over different periods of time. The Agency does not foresee any financial risk borne by holders of mortgages secured by real property subject to PACE assessments due to those changes in preference for energy efficiency projects any more than the Enterprises have seen increased financial risk due to changes in preferences for other features of the secured property. To the contrary, benefits to a new homeowner from prior energy improvements will remain at the property for the life of the improvement and it is difficult to imagine a scenario where a new owner would want the property to be less energy efficient.

Question No. 4(5) – To the extent that the lien priming feature of first lien PACE obligation 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 what cost could such parties insulate themselves from that increase in risk: The timing, direction and magnitude of changes in energy prices.

Florida PACE Funding Agency's Response to Question No. 4(5)[20, 21] - First and foremost, the Agency does not believe that the PACE assessments in Florida will increase any financial risk to the holder of the mortgage or investors in mortgage backed securities. And to the extent that energy prices are only expected to increase, that projection supports the likelihood that

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[18] See footnote [5].
[19] Please also see Agency's Response to Question No. 3(4).
[20] See footnote [5].
[21] Please also see Agency Response to Question No. 3(5).

there will be no additional financial risk to the holder of mortgage or investors in mortgage backed securities from improvements to the overall energy efficiency of the assessed property.

Question No. 4(6) – To the extent that the lien priming feature of first lien PACE obligation 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 what cost could such parties insulate themselves from that increase in risk: The timing , direction and magnitude of changes of property values, including the possibility of downward adjustments in value.

Florida PACE Funding Agency's Response to Question No. 4(6)[22, 23] - The Agency believes that the timing, direction and magnitude of changes in property values are not relevant to financial risk that is borne by holders of mortgages subject to PACE assessments. This is so because the timing, direction and magnitude of changes of property values is a risk that is always on the holder of mortgages with or without PACE assessments. To the contrary, studies have shown that there is an increase in fair market value for property with energy efficiency and alternative energy improvements that is independent from timing, direction and magnitude of changes of property values due to other factors. Furthermore, all studies show increases in property values resulting from energy efficiency improvements, and given the fact that most improvements done with PACE assessments are improvements to the property or addressing deferred maintenance issues, it is unreasonable to assume a downward pressure on property values and the corresponding requirement to address that increase in risk.

C. PACE and the Market for Home-Improvement Financing

Question No. 5 – What are the alternatives to PACE Loans (e.g., self-financing, bank financing, leasing, contractor financing, utility company "on bill" financing, grants, and other government benefits) are available for financing home-improvements projects relating to energy

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[22] See footnote [5].

[23] Please also see Agency Response to Question No. 3(6).

efficiency? On what terms? Which do or do not share the lien-priming feature of first-lien PACE obligations? What are the relative advantages of each, from the perspective of (i) the current and any future homeowner-borrower, (ii) the holder of an interest in any mortgage on the subject property, and (iii) the environment?

Florida PACE Funding Agency's Response to Question No. 5[24] – The Agency believes that the Florida PACE Program financing, funding and resulting assessments present significant benefits to the borrower that have been discussed in prior sections. Most importantly, PACE non-ad valorem assessments in Florida are not typically "due on sale" and are not personal and by law, like all other capital non-ad valorem assessments imposed by a government, must be paid annually along with property taxes by subsequent property owners since the lien "runs with the land", thereby providing a viable financing mechanism to owners who intend to sell the property prior to the payoff of the assessment. The two largest hurdles to many homeowners choosing to invest in energy conservation improvements, alternative energy improvements and wind resistance improvements (a qualifying improvements category unique to Florida) are (1) the often significant costs of such improvements, and (2) the inability to couple the repayment of the upfront costs to the economic recovery period from the increased value of the property and/or savings generated by such improvements. As a result, the significant undertaking of qualifying improvements using all of the other payment/financing methods in the question simply has not occurred with any great frequency. Since these improvements have a direct and significant benefit to not only the improved properties but the community as a whole and the environment, any effort to delay the rapid implementation of qualifying improvements will only have a detrimental impact on the environment. Since qualifying improvements can reduce residential and commercial energy usage by 50% to 70%, the savings in utility costs and environmental impact alone are significant.

[24] The question erroneously, capriciously and arbitrarily mischaracterizes the PACE-related non-ad valorem assessments as "loans", thus creating an inaccurate and biased predicate.

The Florida PACE Program addresses both of these initial hurdles to the wide-spread implementation of qualifying improvements by providing a ready source for the funds needed to pay the upfront costs of qualifying improvements and by coupling the repayment of these funds to the economic recovery period for the qualifying improvements, regardless of who owns the assessed property. As well, the Florida PACE assessment program creates direct, immediate and commensurate additional value to the subject property.

If this type of transaction were accomplished under traditional financing (like line of credit or home equity loan), the financing would be required to be paid off at the time of sale or refinancing of the mortgage loan (unless the energy improvement lender would be willing to forgive or subordinate its lien to the new mortgage lien). Since these loans are based on personal credit, they are generally not assumable by a new purchaser of the property. Since they create a significant likelihood of forced early acceleration of these loans, there is a negative credit impact on the property owner which directly and negatively impacts the mortgage lender. The restrictions of traditional financing and the upfront cost exposure without the assurance of economic recovery of the expenditure if the property owner uses cash resources rather than borrowed funds, effectively discourages, if not precludes, property owners not certain of long term residency from undertaking energy efficient upgrades to their property.

As noted in the question, government grants can certainly be a viable way to pay the costs of qualifying improvements. However, to the Agency's knowledge, such government grant programs are simply not available or realistically available on any sustainable basis on the federal, state or local government level.

Question No. 6 – How does the effect on the value of underlying property of an energy-related home-improvement project financed through a first-lien PACE program compare to the effect on the value of the underlying property that would flow from the same project if financed in any other manner?

Florida PACE Funding Agency's Response to Question No. 6 - The Agency believes that the Florida PACE Program financing, funding and resultant assessments present significant

benefits to the value of the property that have been discussed in prior sections. These benefits inure to both existing and future property owners and mortgage lenders. To the extent that PACE assessments enable a property owner to undertake more extensive energy efficient upgrades because of the ability to stretch the payments out over a longer time to coincide with the economic recovery from the improvements and possibly transfer payments to a subsequent owner, the Agency submits that the PACE Program would result in greater energy savings that correlate directly with increased property values. Alternative financing may not be available or only available at rates far in excess of the rate for a PACE assessment. In essence, absent the existence of the PACE program, large scale energy efficiency qualifying improvements will simply not be undertaken. As properties with PACE assessments change hands or are refinanced, the Florida PACE Program carefully and properly facilitates market driven consideration by the seller and buyer, as well as the mortgage lender.

Question No. 7 – How does the effect on the environment of an energy-related home-improvement project financed through a first-lien PACE program compare to the effect on the environment that would flow from the same project if financed in any other manner?

Florida PACE Funding Agency's Response to Question No. 7 - The Agency believes that the Florida PACE Program financing, funding and resultant assessments present significant benefits to the environment in comparison to projects undertaken under traditional financing. This is so because to the extent that PACE assessments enable a property owner to undertake more extensive energy efficient upgrades because of the ability to stretch the payments out over the reasonable useful life of the improvements, pay for those improvements as a part of the monthly escrow for taxes and transfer payments to a subsequent owner upon a sale of the property, the Agency submits that the PACE Program would result in greater environmental benefits as anticipated by the Florida Legislature through greater energy savings and reduced emissions from electric utilities. The reality is that alternative financing is difficult to obtain, is not available on any significant scale, or only available at rates far in excess of the rates for a PACE assessment.

Question No. 8 – Do first-lien PACE programs cause the completion of energy-related home improvement projects that would not otherwise have been completed, as opposed to changing the method of financing for projects that would have been completed anyway? What, if any, objective evidence exists on this point?

Florida PACE Funding Agency's Response to Question No. 8 - The Agency believes that the Florida PACE Program financing, funding and resultant assessments present a unique opportunity to encourage energy efficiency projects that would not otherwise be undertaken by property owners. This is so because the PACE assessments enable a property owner to undertake energy efficient projects where outstanding financial obligations can be transferred to subsequent owners on a pay-as-you go basis. This advantage is a selling point for homeowners that would otherwise evaluate the project by ability to pay off the loan over their tenure as property owners. Owners who do not intend to own the property for the time necessary to pay off the loan would face a balloon payment at the time of sale and would be likely not to proceed with the energy efficiency project in the first instance. The very existence and structure of the Florida PACE Program is objective evidence that the Florida Legislature has carefully taken action to encourage and facilitate the funding, financing and delivery of qualifying improvements that are not and would not otherwise be undertaken by the marketplace.

D. PACE and Protections for the Homeowner-Borrower

Question No. 9 – What consumer protections and disclosure do first-lien PACE programs mandate for participating homeowners? When and how were those protections put into place? How, if at all, do the consumer protections and disclosures that local first-lien PACE programs provide to participating homeowners differ from the consumer protections and disclosures that non-PACE providers of home-improvement financing provide to borrowers? What consumer protection enforcement mechanisms do first-lien PACE programs have?

Florida PACE Funding Agency's Response to Question No. 9 – The Florida PACE Program has statutory underwriting guidelines as well as mandatory disclosure requirements imposed by Florida law, which are discussed earlier in the comments and herein. In addition, the Agency expects to have additional underwriting and disclosure requirements imposed by financing documents and rating agencies. Since the Agency is a governmental entity, it may not be subject to all private sector consumer lending disclosure requirements, but it must act like any other local government. The Agency, like any responsible local government, is intent on using both existing consumer disclosure requirements imposed in financing transactions as a guide and applying disclosures and protections in implementing its disclosure and protections to participating property owners.

Question No. 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? What is the effect on the financial risk borne by the holder of any mortgage interest in a subject property if PACE programs do not provide any such protections or disclosures?

Florida PACE Funding Agency's Response to Question No. 10 – The Florida PACE Program requires disclosure to all property owners as required by statute; and, the Agency will also likely consider and use, for good communication and business reasons, customary disclosures provided by other consumer financing or lending systems. The Agency is not opposed to and anticipates developing a uniform and broad disclosure process. The risk of the subject matter of the first part of the question as posed is suspect, unduly speculative and

unlikely.[25] Even with the minimum statutory disclosure and compliance with the Florida PACE Act, the likelihood of resulting financial risk to any mortgagor is not existent.

Question No. 11 – What, if any, protections or disclosures do first-lien PACE programs provide to homeowner-borrowers concerning the possibility that the utility-cost savings resulting from a PACE-financed project will be less than the cost of servicing the PACE obligation? What is the effect on the financial risk borne by the holder of any mortgage interest in a subject property if first-lien PACE programs do not provide any such protections or disclosures?

Florida PACE Funding Agency's Response to Question No. 11 – Many of the PACE improvements defined by Florida law which constitute qualifying improvements have known energy cost saving associated with them, such as solar water heaters, geothermal heat pumps, high SEER heat pump units, building insulation, to name a few. The expected savings from these units can be readily calculated and disclosed. In other cases, the improvements may have resulted from an energy audit (third party program or local utility program) and once again, the savings can be disclosed to or determined by the property owner. The Florida PACE Program is designed to provide either energy/utility savings or to render the property more cost effectively insurable (wind mitigation improvements). Under these conditions, the Agency does not anticipate that there will be a disassociation between the cost of the assessment and the energy or insurance savings resulting from the assessment. Each owner, as a market participant, will evaluate and determine the value of energy, insurance and other savings and benefits.

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[25] For example, as a matter of well settled law, the amount of the assessment must equal or exceed the benefit or burden received by the property (not to the property owner). This legal concept and determination is expressly addressed by the Florida Legislature in the Florida PACE Act. The question posed by FHFA, *inter alia*, subsumes the property owner involved is irrational and likely to make a market-based decision against the owner's own interest. The Agency would also point out that the possibility that a "PACE-financed" qualifying improvement reducing the value of the home is remote and speculative; and, likely no more than any other governmental assessment. Accordingly, the stated ill in the second or follow-on question is also commensurately highly remote and speculative.

However, several economic studies have shown that when property owners install energy conservation improvements they do not receive the full expected savings not because the savings were not generated, but because the homeowner's personal decisions change. For example, the owners of a home with a low-efficiency heat pump system may set the temperature low in the winter and high in the summer to save on utility bills, but once they install a high efficiency unit to replace the low-efficiency unit, they change the heat and air conditioning settings to a warmer temperature in the winter and a colder setting in the summer, thus partially defeating the benefits of the high efficiency system. Although the Agency intends on counseling prospective property owners on this phenomenon, the value may only inure to an owner or occupant who maximizes available utility cost savings.

Additionally, the statutory cap on the amount of the assessment in the Florida legislation mitigates financial risk which might otherwise emanate from such a circumstances feared in the question posed.

Question No. 12 – What, if any, protections or disclosures do first-lien PACE programs provide to homeowner-borrowers concerning the possibility that over the service life of a PACE-financed project, the homeowner-borrower may face additional costs (such as costs of insuring, maintaining, and repairing equipment) beyond the direct cost of the PACE obligation? What is the effect on the financial risk borne by the holder of any mortgage interest in a subject property if first-lien PACE programs do not provide any such protections or disclosures?

Florida PACE Funding Agency's Response to Question No. 12 – It is anticipated that reasonable underwriting standards for financing will limit the terms of the assessment to the expected economic life of the improvement, which is the period before repairs are customarily required. Product warranties from the manufacturer and/or installer for many of the improvements typically will be available for all or a significant portion of the expected economic life of the improvements. Therefore, in most instances, the property owner will not likely be incurring additional costs to maintain the improvement while paying the assessment in the same year. However, complications with improved property do occur, which are

inherent risks associated with property ownership. This circumstance of insuring, maintaining and repairing improvements and servicing a property is typically priced into every mortgage by every mortgage lender with or without a PACE assessment. The PACE assessment affords a preferred means to pay for the improvement over its economic life; and thus allows for cash flow to address unexpected service costs. As well, the tax bill collection and escrow method alerts the mortgage lender earlier in the process if a mortgagor becomes unable to meet those obligations.

Question No. 13 – What, if any, protections or disclosures do first-lien PACE programs provide to homeowner-borrowers concerning the possibility that subsequent purchasers of the subject property will reduce the amount they would pay to purchase the property by some or all of the amount of any outstanding PACE obligation? What is the effect on the financial risk borne by the holder of any mortgage interest in a subject property if first-lien PACE programs do not provide any such protections or disclosures?

Florida PACE Funding Agency's Response to Question No. 13 - Florida's PACE Program has statutory disclosure requirements discussed in the prior sections, so the buyer will be on notice of the assessment and its terms. The Agency believes that the PACE assessment will be only one of the many negotiated items in any sale of real property, and buyers and sellers will take differing negotiating positions on each of many negotiating points, regardless of whether the property has been improved with qualifying improvements. There is no reason to believe that the existence of a PACE assessment or the qualifying improvements would be determinative on whether or not real property will sell or on the price of the real property any more than the water and sewer rates, property taxes rates and other assessments on properties are the sole determining factor.

E. PACE and Underwriting Standards

Question No. 14 – How do the credit underwriting standards and processes of PACE programs compare to that of other providers of Home-improvement financing, such as banks?

Do they consider, for example: (i) borrower creditworthiness, including an assessment of total indebtedness in relation to borrower income, consistent with national standards: (ii) total loan-to-value ratio of all secured loans on the property combined, consistent with national standards; and (iii) appraisals of property value, consistent with national standards?

Florida PACE Funding Agency's Response to Question No. 14 – FHFA cannot compare personal loan credit underwriting requirements to governmental assessment underwriting because the assessments are not personal in nature. For example, tax levies and other governmental assessments by local governments do not take into account personal credit underwriting as part of the assessment process. Nonetheless the Florida PACE Act does provide specific statutory underwriting guidelines which are effective means to reduce risk that the Florida PACE Program is employed by property owners unable to timely pay their taxes and assessment.

However, more importantly, in Florida and most states, the value of the benefit or relief of a burden derived from the assessed for improvements is required to equal or exceed the amount assessed. This is a decision initially made by the property owner in the context of the financing agreement which evidences the non-ad valorem assessment and that is immediately borne out upon the increased escrow and payment of the assessment along with taxes. Subsequently, the total indebtedness (including taxes and assessments) in relation to "borrower'" income will be borne out as the property is refinanced or sold and subsequently financed. Clearly, the value of the qualifying improvements, although direct and immediate, are initially evaluated by the owner before seeking the assessment, and then subsequently by the market and appraisal process as a refinancing or sale process occurs in the future.

Finally, in Florida, the PACE assessment guidelines are designed to be cost neutral by offsetting the cost of the improvement with the resulting utility or property insurance savings.

Question No. 15 – What factors do first-lien PACE programs consider in determining whether to provide PACE financing to a particular homeowner-borrower seeking funding for a

particular project eligible for PACE financing? What analytic tools presently exist to make that determination? How, if at all, have the methodologies, metrics, and assumptions incorporated into such tools been tested and validated?

Florida PACE Funding Agency's Response to Question No. 15 – The Florida PACE legislation (§163.08, Florida Statutes) imposes specific statutory underwriting guidelines on assessments for qualifying improvements. See Florida PACE Program statutory guidelines discussed in Section I.3 above, and the response to Question 14 above.

Question No. 16 – What factors and information do first-lien PACE programs gather and consider in determining whether a homeowner-borrower will have sufficient income or cash flow to service the PACE obligation in addition to the homeowner-borrower's pre-existing financial obligation? What analytic tools presently exist to make that determination? How, if at all, have the methodologies, metrics, and assumptions incorporated into such tools been tested and validated?

Florida PACE Funding Agency's Response to Question No. 16 – See Florida PACE Program statutory guidelines discussed in Section I.3 above, and the response to Question 14 above.

F. Considerations Relating to FHFA's Intent to Prepare an EIS.

Question No. 17 –What specific alternatives to FHFA's existing statements about PACE should FHFA consider? For each alternative, as compared to the Proposed Action, what positive or negative environmental effects would result and how would the level of financial risk borne by holders of any interest in a mortgage on PACE-affected properties change?

Florida PACE Funding Agency's Response to Question No. 17 – FHFA's stated Proposed Action is not to purchase any mortgage that is subject to a PACE assessment or that could become subject to a PACE assessment without the consent of the mortgage holder. In Florida with the Florida PACE Program applicable statewide, the Proposed Action means that all Florida property owners would be required to obtain advance lender consent to participate

in the Florida PACE Program. This is an extreme position that was not supported by the Florida Mortgage Bankers Association when the Florida PACE Act was almost unanimously passed by the Florida Legislature and signed into law by the Governor. Indeed, in many instances, it is virtually impossible to determine the identity of the actual owner of a residential mortgage.

Such a requirement by the Enterprises or FHFA is an overly broad and a passive, but violent, attempt to eviscerate a real and meaningful opportunity for Florida, and other states, to encourage and facilitate the PACE funding, financing and delivery of energy conservation and efficiency improvements, renewable energy improvements and wind resistance improvements to willing and informed property owners. Requiring consent by a mortgagee to a "PACE-loan" mischaracterizes a governmental special assessment as a "loan" on par or subordinate to a mortgage.

There is no such thing as a "PACE-loan" and it is disingenuous for the Enterprises and FHFA, who are learned, to undertake policy and business position knowing there is well settled legal precedent that is over 100 years old and under which every mortgage ever issued or purchased by the Enterprises it was and is well known that – every mortgage issued is, will and is intended to be subordinate to property taxes and special or non-ad valorem assessments which are imposed during the life of the mortgage. The existing Statement by FHFA that attempts to distinguish or characterize a governmental non-ad valorem assessment as subordinate to a mortgage by requiring consent to a PACE Assessment on its face is an unprecedented intrusion on a grand scale into the superiority of the governmental lien of taxes and assessments.

Such a policy and business position by FHFA is unnecessary and extreme, it beckons to Congress, legislators, municipal bond markets, local governments, businesses and the public that a significant market participant and regulator is willing to abuse its power and position by selectively demanding a mortgagee consent to the nature and type of governmental taxes, liens and actions that it otherwise, by law, has no right to demand.

The implicit threat of 'redlining' whole jurisdictions or even an entire state, or informally discouraging or 'water-marking' financial institutions (literally bursting at the seams with money attracted to the superior and virtually default-free security of non-ad valorem assessments) desirous of immediately participating, but for the lack of inclination or inability by the Enterprises and FHFA to embrace a thoughtful PACE regime, is disappointing to say the least.

FHFA has asked for commenters to identify specific alternatives to the Proposed Action. The Agency recommends that FHFA embrace or, at the least, exempt the Agency's Florida PACE Program from the Proposed Action, and work with the Agency to make its program a standard bearer. This recommendation is based on all the reasons discussed in preceding sections and responses to questions that demonstrate that the viability and thoughtful provisions of the Agency's Florida PACE Program do not pose any risk to the financial viability of the Enterprises or other mortgagees. In the absence of any ability to demonstrate an actual risk to the Enterprises, there is no reason to require mortgage holder approval, which is a difficult, if not practically impossible, hurdle for the property owner to overcome in the age of bundled and repeatedly sold mortgages and separation of mortgage owners from mortgage servicers.

Positive Environmental Effects – Enormous increased energy efficiency and reduced greenhouse gas emissions from utility sources due to property owners' participation in the Florida PACE Program. Enormous reduction in environmental consequences from wind and storm damage which annually threatens Florida improved properties due to property owners' participation in the Florida PACE Program.

Level of Financial Risk Borne by Holder of any interest in PACE properties – None in Florida. In fact, the Florida PACE Program reduces risk to owners and mortgage lenders by increasing the value of property in Florida as discussed in prior sections.

Environmental Impact – The State of Florida has formally determined the following:

(A) In chapter 2008-227, Laws of Florida, the Legislature amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources.

(B) That chapter 2008-227, Laws of Florida, also declared it the public policy of the state to play a leading role in developing and instituting energy management programs that promote energy conservation, energy security and the reduction of greenhouse gases.

(C) In chapter 2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas reduction comprehensive planning requirements for local governments.

(D) All energy-consuming improved properties that are not using energy conservation strategies contribute to the burden affecting all improved property resulting from fossil fuel energy production.

(E) Improved property that has been retrofitted with energy-related qualifying improvements receives the special benefit of alleviating the property's burden from energy consumption.

(F) All improved properties not protected from wind damage by wind resistance qualifying improvements contribute to the burden affecting all improved property resulting from potential wind damage. Improved property that has been retrofitted with wind resistance qualifying improvements receives the special benefit of reducing the property's burden from potential wind damage.

(G) The installation and operation of qualifying improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the state's energy and hurricane mitigation policies.

(H) In order to make qualifying improvements more affordable and assist property owners who wish to undertake such improvements, there is a compelling state interest in

enabling property owners to voluntarily finance such improvements with local government assistance.

In light of the State's determination that the implementation of the Florida PACE Program is of a compelling state interest with significant environmental impacts, any actions which seek to undermine, delay or impede the implementation of a Florida PACE program by requiring mortgagee consent to only PACE related non-ad valorem assessments would have a significant negative environmental impact in Florida and upon its inhabitants.

Invitation to FHFA from the Florida PACE Funding Agency to Establish an Immediate and Meaningful Dialogue – The Agency has not sought to engage in the various on-going federal legislation aimed at changing the business or policy decisions in the Statement or Directive. The Agency also recognizes that FHFA likely would not be involved in rulemaking but for directions to do so from a federal court. Nevertheless these comments are made in good faith.

The Agency and the local government community in Florida have developed in good faith one of the most, if not the most, thoughtful real-life and comprehensive approach to implementation. The Agency's approach is not a replication of other programs, but structured by a Legislature, public finance and local government administrators and professionals that well understand Florida. The Agency is poised to begin the process of funding, financing and delivery of qualified improvements. At stake is the ability to immediately unleash billions of dollars in economic activity in Florida alone, the achievement of many laudable environmental activities, the careful protection of owners and mortgage lenders within a long accepted framework of governmental liens and lien law and an enormous number of private sector jobs potentially attributable to this endeavor.

There is disappointment that FHFA and the Enterprises have not and will not respond to telephone calls, emails or overtures. Because of the policy, business and legal ramifications, as well as drain on resources, the reluctance over the last two years for the Enterprises and

FHFA to do anything but mischaracterize and treat the concept of PACE as a subordinate competitor of some sort may be understandable.

The Agency is not a concept. The Agency has worked hard to create a real and discernable implementation program that is uniform, scalable and statewide in scope. Its participants and advisors are not dealing in the theoretical - the Florida PACE Funding Agency is real; its authority to enter the financing market and stature have been judicially validated; it has engaged counsel, financial advisory professionals, and importantly has a clear mission that is authorized and well controlled by general law in Florida.

Mr. Pollard, as a specific alternative to FHFA's existing Statement and Directive, the Agency respectfully invites you to engage in earnest and meaningful informal dialogue with representatives of the Agency. This dialogue will allow you to better evaluate the Agency's approach, and for Agency representatives to listen to you and FHFA's concerns, with a mutual objective of creating a workable business and policy approach with the Agency in Florida under the Florida PACE Program. The Agency's preparation and research have been extensive, and the Agency's objective is to keep the process simple, advance the Agency's Florida PACE Program on a uniform basis, and to do so in a manner that reasonably protects ALL mortgage lenders and servicers. Our constituency is local governments in Florida, and the positive results of a series of discussions as it relates to the Enterprises as an alternative the FHFA current Statement and Directive should not be underestimated. We ask for your thoughtful and positive response separate and apart from this rulemaking exercise; and, a commitment to promptly set an initial meeting to consider fashioning a mutually agreeable alternative in Florida.

Thank you for the opportunity to submit comments on the FHFA's ANPR. Please do not hesitate to contact me, Messrs. Steigerwald, Reid or Lawson if you have further questions or comments.

Sincerely,

Barbara S. Revels, Chair
Florida PACE Funding Agency
c/o Michael H. Steigerwald, Executive Director
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Representative Steve Southerland
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Representative Ander Crenshaw
Representative Richard Nugent
Representative Cliff Stearns
Representative John L. Mica
Representative Daniel Webster
Representative Gus M. Bilirakis
Representative C. W. (Bill) Young
Representative Kathy Castor
Representative Dennis Ross
Representative Vern Buchanan

Representative Connie Mack
Representative Bill Posey
Representative Thomas J. Rooney
Representative Frederica Wilson
Representative Ileana Ros-Lehtinen
Representative Ted Deutch
Representative Debbie Wasserman Schultz
Representative Mario Diaz-Balart
Representative Allen West
Representative Alcee L. Hastings
Representative Sandy Adams
Representative David Rivera
Governor Scott – Chief of Staff – Steve MacNamara
Florida Department of Agriculture and Consumer Services, Commissioner Adam H. Putnam
Florida Senator Mike Haridopolos, Senate President
Florida Representative, Dean Cannon, Speaker of the House
Florida Association of Counties, Christopher L. Holley, Executive Director
Florida League of Cities, Michael Sittig, Executive Director

EXHIBIT A

SECTION 163.08, FLORIDA STATUTES (2011)

environmental, economic, social, recreational, and aesthetic issues. The committee shall monitor the progress on each element of such plan and shall revise the plan regularly.

(b) Prepare an integrated financial plan using the different jurisdictional agencies available for projected financial resources. The committee shall monitor the progress on each element of such plan and revise the plan regularly.

(c) Provide technical assistance and political support as needed to help implement each element of the strategic and financial plans.

(d) Accept any specifically defined coordinating authority or function delegated to the committee by any level of government through a memorandum of understanding or other legal instrument.

(e) Publicize a semiannual report describing accomplishments of the commission and each member agency, as well as the status of each pending task. The committee shall distribute the report to the city and county commissions and mayors, the Governor, chair of the Miami-Dade County delegation, stakeholders, and the local media.

(f) Seek grants from public and private sources and receive grant funds to provide for the enhancement of its coordinating functions and activities and administer contracts that achieve these goals.

(g) Provide a forum for exchange of information and facilitate the resolution of conflicts.

(h) Act as a clearinghouse for public information and conduct public education programs.

(i) Establish the Miami River working group, appoint members to the group, and organize subcommittees, delegate tasks, and seek [1]counsel from members of the working group as necessary to carry out the powers and duties listed in this subsection.

(j) Elect officers and adopt rules of procedure as necessary to carry out the powers and duties listed above and solicit appointing authorities to name replacements for policy committee members who do not participate on a regular basis.

(k) Hire the managing director, who shall be authorized to represent the commission and to implement all policies, plans, and programs of the commission. The committee shall employ any additional staff necessary to assist the managing director.

History.—ss. 5, 7, ch. 98-402; s. 1, ch. 2003-123; s. 26, ch. 2008-4; s. 2, ch. 2011-139.

[1]**Note.**—The word "counsel" was substituted for the word "council" by the editors to conform to context.

163.061 Miami River Commission; unanimous vote required for certain acts.—

(1) No item, motion, directive, or policy position that would impact or in any way diminish levels of currently permitted commercial activity on the Miami River or riverfront properties shall be adopted by the Miami River Commission unless passed by a unanimous vote of the appointed members of the commission then in office.

(2) No item, motion, directive, or policy position suggesting, proposing, or otherwise promoting additional taxes, fees, charges, or any other financial obligation on owners of riverfront property or shipping companies or operators shall be adopted by the Miami River Commission unless passed by a unanimous vote of all appointed members of the commission then in office.

History.—ss. 6, 7, ch. 98-402; s. 1, ch. 2003-123.

163.065 Miami River Improvement Act.—

(1) SHORT TITLE.—This section may be cited as the "Miami River Improvement Act."

(2) FINDINGS; PURPOSE.—

(a) The Miami River Commission was created by chapter 98-402, Laws of Florida, to be the official coordinating clearinghouse for all public policy and projects related to the Miami River.

(b) The United States Congress has provided funding for an initial federal share of 80 percent for the environmental and navigational improvements to the Miami River. The governments of the City of Miami and Miami-Dade County are coordinating with the Legislature and the Florida Department of Environmental Protection to determine how the 20-percent local share will be provided.

(c) Successful revitalizing and sustaining the urban redevelopment of the areas adjacent to the Miami River is dependent on addressing, through an integrated and coordinated intergovernmental plan, a range of varied components essential to a healthy urban environment, including cultural, recreational, economic, and transportation components.

(d) The purpose of this section is to ensure a coordinated federal, state, regional, and local effort to improve the Miami River and adjacent areas.

(3) AGENCY ASSISTANCE.—All state and regional agencies shall provide all available assistance to the Miami River Commission in the conduct of its activities.

(4) PLAN.—The Miami River Commission, working with the City of Miami and Miami-Dade County, shall consider the merits of the following:

(a) Development and adoption of an urban infill and redevelopment plan, under ss. 163.2511-163.2523, which participating state and regional agencies shall review for the purposes of determining consistency with applicable law.

(b) Development of a greenway/riverwalk and blueway, where appropriate, as authorized in s. 260.011, to provide an attractive and safe connector system of bicycle, pedestrian, and transit routes and water taxis to link jobs, waterfront amenities, and people, and contribute to the comprehensive revitalization of the Miami River.

History.—s. 26, ch. 2000-170; s. 23, ch. 2001-60; s. 185, ch. 2010-102.

163.08 Supplemental authority for improvements to real property.—

(1)(a) In chapter 2008-227, Laws of Florida, the Legislature amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources. That act also declared it the public policy of the state to play a leading role in developing and instituting energy management programs that promote

energy conservation, energy security, and the reduction of greenhouse gases. In addition to establishing policies to promote the use of renewable energy, the Legislature provided for a schedule of increases in energy performance of buildings subject to the Florida Energy Efficiency Code for Building Construction. In chapter 2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas reduction comprehensive planning requirements for local governments. In the 2008 general election, the voters of this state approved a constitutional amendment authorizing the Legislature, by general law, to prohibit consideration of any change or improvement made for the purpose of improving a property's resistance to wind damage or the installation of a renewable energy source device in the determination of the assessed value of residential real property.

(b) The Legislature finds that all energy-consuming-improved properties that are not using energy conservation strategies contribute to the burden affecting all improved property resulting from fossil fuel energy production. Improved property that has been retrofitted with energy-related qualifying improvements receives the special benefit of alleviating the property's burden from energy consumption. All improved properties not protected from wind damage by wind resistance qualifying improvements contribute to the burden affecting all improved property resulting from potential wind damage. Improved property that has been retrofitted with wind resistance qualifying improvements receives the special benefit of reducing the property's burden from potential wind damage. Further, the installation and operation of qualifying improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the state's energy and hurricane mitigation policies. In order to make qualifying improvements more affordable and assist property owners who wish to undertake such improvements, the Legislature finds that there is a compelling state interest in enabling property owners to voluntarily finance such improvements with local government assistance.

(c) The Legislature determines that the actions authorized under this section, including, but not limited to, the financing of qualifying improvements through the execution of financing agreements and the related imposition of voluntary assessments are reasonable and necessary to serve and achieve a compelling state interest and are necessary for the prosperity and welfare of the state and its property owners and inhabitants.

(2) As used in this section, the term:

(a) "Local government" means a county, a municipality, or a dependent special district as defined in s. 189.403.

(b) "Qualifying improvement" includes any:

1. Energy conservation and efficiency improvement, which is a measure to reduce consumption through conservation or a more efficient use of electricity, natural gas, propane, or other forms of energy on the property, including, but not limited to, air sealing; installation of insulation; installation of energy-efficient heating, cooling, or ventilation systems; building modifications to increase the use of daylight; replacement of windows; installation of energy controls or energy recovery systems; installation of electric vehicle charging equipment; and installation of efficient lighting equipment.

2. Renewable energy improvement, which is the installation of any system in which the electrical, mechanical, or thermal energy is produced from a method that uses one or more of the following fuels or energy sources: hydrogen, solar energy, geothermal energy, bioenergy, and wind energy.

3. Wind resistance improvement, which includes, but is not limited to:

a. Improving the strength of the roof deck attachment;

b. Creating a secondary water barrier to prevent water intrusion;

c. Installing wind-resistant shingles;

d. Installing gable-end bracing;

e. Reinforcing roof-to-wall connections;

f. Installing storm shutters; or

g. Installing opening protections.

(3) A local government may levy non-ad valorem assessments to fund qualifying improvements.

(4) Subject to local government ordinance or resolution, a property owner may apply to the local government for funding to finance a qualifying improvement and enter into a financing agreement with the local government. Costs incurred by the local government for such purpose may be collected as a non-ad valorem assessment. A non-ad valorem assessment shall be collected pursuant to s. 197.3632 and, notwithstanding s. 197.3632(8)(a), shall not be subject to discount for early payment. However, the notice and adoption requirements of s. 197.3632(4) do not apply if this section is used and complied with, and the intent resolution, publication of notice, and mailed notices to the property appraiser, tax collector, and Department of Revenue required by s. 197.3632(3)(a) may be provided on or before August 15 in conjunction with any non-ad valorem assessment authorized by this section, if the property appraiser, tax collector, and local government agree.

(5) Pursuant to this section or as otherwise provided by law or pursuant to a local government's home rule power, a local government may enter into a partnership with one or more local governments for the purpose of providing and financing qualifying improvements.

(6) A qualifying improvement program may be administered by a for-profit entity or a not-for-profit organization on behalf of and at the discretion of the local government.

(7) A local government may incur debt for the purpose of providing such improvements, payable from revenues received from the improved property, or any other available revenue source authorized by law.

(8) A local government may enter into a financing agreement only with the record owner of the affected property. Any financing agreement entered into pursuant to this section or a summary memorandum of such agreement shall be recorded in the public records of the county within which the property is located by the

sponsoring unit of local government within 5 days after execution of the agreement. The recorded agreement shall provide constructive notice that the assessment to be levied on the property constitutes a lien of equal dignity to county taxes and assessments from the date of recordation.

(9) Before entering into a financing agreement, the local government shall reasonably determine that all property taxes and any other assessments levied on the same bill as property taxes are paid and have not been delinquent for the preceding 3 years or the property owner's period of ownership, whichever is less; that there are no involuntary liens, including, but not limited to, construction liens on the property; that no notices of default or other evidence of property-based debt delinquency have been recorded during the preceding 3 years or the property owner's period of ownership, whichever is less; and that the property owner is current on all mortgage debt on the property.

(10) A qualifying improvement shall be affixed to a building or facility that is part of the property and shall constitute an improvement to the building or facility or a fixture attached to the building or facility. An agreement between a local government and a qualifying property owner may not cover wind-resistance improvements in buildings or facilities under new construction or construction for which a certificate of occupancy or similar evidence of substantial completion of new construction or improvement has not been issued.

(11) Any work requiring a license under any applicable law to make a qualifying improvement shall be performed by a contractor properly certified or registered pursuant to part I or part II of chapter 489.

(12)(a) Without the consent of the holders or loan servicers of any mortgage encumbering or otherwise secured by the property, the total amount of any non-ad valorem assessment for a property under this section may not exceed 20 percent of the just value of the property as determined by the county property appraiser.

(b) Notwithstanding paragraph (a), a non-ad valorem assessment for a qualifying improvement defined in subparagraph (2)(b)1. or subparagraph (2)(b)2. that is supported by an energy audit is not subject to the limits in this subsection if the audit demonstrates that the annual energy savings from the qualified improvement equals or exceeds the annual repayment amount of the non-ad valorem assessment.

(13) At least 30 days before entering into a financing agreement, the property owner shall provide to the holders or loan servicers of any existing mortgages encumbering or otherwise secured by the property a notice of the owner's intent to enter into a financing agreement together with the maximum principal amount to be financed and the maximum annual assessment necessary to repay that amount. A verified copy or other proof of such notice shall be provided to the local government. A provision in any agreement between a mortgagee or other lienholder and a property owner, or otherwise now or hereafter binding upon a property owner, which allows for acceleration of payment of the mortgage, note, or lien or other unilateral modification solely as a result of entering into a financing agreement as provided for in this section is not enforceable. This subsection does not limit the authority of the holder or loan servicer to increase the required monthly escrow by an amount necessary to annually pay the qualifying improvement assessment.

(14) At or before the time a purchaser executes a contract for the sale and purchase of any property for which a non-ad valorem assessment has been levied under this section and has an unpaid balance due, the seller shall give the prospective purchaser a written disclosure statement in the following form, which shall be set forth in the contract or in a separate writing:

> QUALIFYING IMPROVEMENTS FOR ENERGY EFFICIENCY, RENEWABLE ENERGY, OR WIND RESISTANCE.—The property being purchased is located within the jurisdiction of a local government that has placed an assessment on the property pursuant to s. 163.08, Florida Statutes. The assessment is for a qualifying improvement to the property relating to energy efficiency, renewable energy, or wind resistance, and is not based on the value of property. You are encouraged to contact the county property appraiser's office to learn more about this and other assessments that may be provided by law.

(15) A provision in any agreement between a local government and a public or private power or energy provider or other utility provider is not enforceable to limit or prohibit any local government from exercising its authority under this section.

(16) This section is additional and supplemental to county and municipal home rule authority and not in derogation of such authority or a limitation upon such authority.

History.—s. 1, ch. 2010-139.

PART II

GROWTH POLICY; COUNTY AND MUNICIPAL PLANNING; LAND DEVELOPMENT REGULATION

EXHIBIT B

INTERLOCAL AGREEMENT BETWEEN FLAGLER COUNTY AND CITY OF KISSIMMEE CREATING THE FLORIDA PACE FUNDING AGENCY

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AGREEMENT
RELATING TO THE ESTABLISHMENT
OF THE
FLORIDA PACE FUNDING AGENCY

TABLE OF CONTENTS

PAGE

ARTICLE I
DEFINITIONS AND CONSTRUCTION

ARTICLE II
THE AGENCY

ARTICLE III
GENERAL PROVISIONS

INTERLOCAL AGREEMENT RELATING TO THE ESTABLISHMENT OF THE FLORIDA PACE FUNDING AGENCY

THIS INTERLOCAL AGREEMENT is made and entered into as of the last date of execution hereof by the Incorporators (hereinafter the "Charter Agreement" or "Charter"), by and among the local governments acting as Incorporators hereof (each an "Incorporator", and collectively, the "Incorporators") as evidenced by their execution hereof, by and through their respective governing bodies. The purpose of this Charter Agreement is to create and establish a separate legal entity, public body and unit of local government, pursuant to Section 163.01(7)(g), Florida Statutes, with all of the privileges, benefits, powers and terms provided for herein and by law.

W I T N E S S E T H:

NOW, THEREFORE, in consideration of the mutual covenants herein contained and for other good and valuable consideration each to the other, receipt of which is hereby acknowledged by each Incorporator, hereby agree, stipulate and covenant as follows:

ARTICLE I
DEFINITIONS AND CONSTRUCTION

SECTION 1.01. DEFINITIONS. As used in this Charter Agreement, the following terms shall have the meanings as defined unless the context requires otherwise:

"Agency" means the Florida PACE Funding Agency, a separate legal entity and public body created pursuant to the provisions of this Charter Agreement. The name or acronym PACE is derived from the concept commonly referred to as 'property assessed clean energy' and relates hereto to the provisions of general law related to energy efficiency, renewable energy, and/or wind resistance improvements encouraged and authorized by Section 163.08, Florida Statutes.

"Charter Agreement" or **"Charter"** means this Charter Agreement including any amendments and supplements hereto executed and delivered in accordance with the terms hereof.

"Financing Documents" shall mean the resolution or resolutions duly adopted by the Agency, as well as any indenture of trust, trust agreement, interlocal agreement or other instrument relating to the issuance or security of any bond or obligations of the Agency, and the lending or provision of the proceeds thereof to a Subscribing Local Government.

"Incorporator" and **"Incorporators"** shall mean those local governments executing this Charter Agreement, acting as the Incorporators of the Agency, and any future constituent local government member of the Agency who may join in to this Charter Agreement.

"Obligations" shall mean a series of bonds, obligations or any other evidence of indebtedness, including, but not limited to, notes, commercial paper, certificates or any other obligations of the Agency issued hereunder, or under any general law provisions, and pursuant to the Financing Documents. The term shall also include any lawful obligation committed to by the Agency pursuant to an interlocal agreement with another governmental body or agency and/or warrants issued for services rendered or administration expenses.

"Pledged Funds" shall mean (A) the revenues derived from non-ad valorem special assessments levied by a Subscribing Local Government and other moneys received by the Agency or its designee relating to some portion thereof, (B) until applied in accordance with the terms of the Financing Documents, all moneys in the funds, accounts and sub-accounts established thereby, including investments therein, and (C) such other property, assets and moneys of the Agency as shall be pledged pursuant to the Financing Documents; in each case to the extent provided by the Board of Directors pursuant to the Financing Documents. The Pledged Funds pledged to one series of Obligations may be different than the Pledged Funds pledged to other series of Obligations. Pledged Funds shall not include any general or performance assurance fund or account of the Agency.

"Qualifying Improvement" means those improvements for energy efficiency, renewable energy, and/or wind resistance or any such similar purposes described or authorized in the Supplemental Act or any amendment thereto, to be affixed or installed by the record owner of an affected property. Until subsequently determined by the Board of Directors of the Agency once the Agency's programs have become established, Qualifying Improvements shall not include improvements completed before the property has received an initial certificate of occupancy.

"Subscribing Local Government" or **"Subscriber"** shall mean any municipality, county or other government permitted by the Supplemental Act to enter into financing agreements as provided for therein which elects to participate in the Agency's financing program for Qualifying Improvements by entering into a Subscription Agreement with the Agency.

"Subscription Agreement" means a separate interlocal agreement between the Agency and any municipality, county or other government permitted by the Supplemental Act to enter into financing agreements as provided for therein. At a minimum, such Subscription Agreement shall provide for (1) the authority of the Agency to act, provide its services, and conduct its affairs within the subscribing government's jurisdiction; (2) the Agency to facilitate the voluntary acquisition, delivery, installation or any other manner of provision of Qualifying Improvements to record owners desiring such improvements who are willing to enter into financing agreements as provided for in the Supplemental Act and agree to impose non-ad valorem assessments which shall run with the land on their respective properties; (3) the Subscribing Local Government to levy, impose and collect non-ad valorem assessments pursuant to such financing agreements; (4) the issuance of Obligations of the Agency to fund and finance the Qualifying Improvements; (5) for the proceeds of such non-ad valorem assessments to be timely and faithfully paid to the Agency; (6) the withdrawal from, discontinuance of, or termination of the Subscription Agreement by either party upon reasonable notice in a manner not detrimental to the holders of any Obligations of the Agency

or inconsistent with any Financing Documents; (7) such disclosures, consents or waivers reasonably necessary to use or employ the services and activities of the Agency; and (8) such other covenants or provisions deemed necessary and mutually agreed to by the parties to carry out the purpose and mission of the Agency.

"Supplemental Act" means the provisions of, and additional and supplemental authority described in, Section 163.08, Florida Statutes, and as may be amended from time to time and contemporaneously in effect.

SECTION 1.02 CONSTRUCTION.

(A) Words importing the singular number shall include the plural in each case and vice versa, and words importing persons shall include firms and corporations. The terms "herein," "hereunder," "hereby," "hereto," "hereof," and any similar terms, shall refer to this Charter Agreement; the term "heretofore" shall mean before the date this Charter Agreement is entered into; and the term "hereafter" shall mean after the date this Charter Agreement is entered into.

(B) Each recital, covenant, agreement, representation and warranty made by a party herein shall be deemed to have been material and to have been relied on by the other party to this Charter Agreement. Each Incorporator has reviewed and desires to enter into this Charter Agreement; the Agency is a successor to such Incorporators and a beneficiary hereof, and the provisions hereof shall not be construed for or against any Incorporator or the Agency by reason of authorship or incorporation.

SECTION 1.03. SECTION HEADINGS. Any headings preceding the texts of the several Articles and Sections of this Charter Agreement and any table of contents or marginal notes appended to copies hereof shall be solely for convenience of reference and shall neither constitute a part of this Charter Agreement nor affect its meaning, construction or effect.

SECTION 1.04. FINDINGS. It is hereby ascertained, determined and declared that:

(A) The Legislature has determined that all energy consuming improvements to property that are not using energy conservation strategies contribute to the burden resulting from fossil fuel energy production. This comports with the declared public policy of the State to play a leading role in developing and instituting energy management programs to promote energy conservation, energy security, and the reduction of greenhouse gases, in addition to establishing policies to promote the use of renewable energy.

(B) The Legislature has also determined that improved properties not protected from wind damage by wind-resistant improvements contribute to the burden resulting from potential wind damage; and, the installation and operation of Qualifying Improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the State's energy and hurricane mitigation policies.

(C) In the Supplemental Act, the Legislature finds that there is a compelling State interest in enabling property owners to voluntarily finance such improvements with local government facilitative assistance.

(D) In the Supplemental Act, the Legislature makes it clear that the financing of Qualifying Improvements through the execution of financing agreements and related imposition of voluntary assessments is reasonable and necessary for the prosperity and welfare of the State and its property owners and inhabitants.

(E) The Supplemental Act also expressly allows for local governments to enter into partnerships with one or more local governments for the purpose of providing and financing Qualifying Improvements.

(F) Although, in theory, assessments for Qualifying Improvements could be imposed under home rule authority, the Legislature felt it necessary and desirable to provide supplemental authority and encouragement which provides a framework for local, regional, and even state-wide approaches. The Supplemental Act provides guidelines, safeguards and clarifies necessary aspects of implementation. The concept that each landowner voluntarily subjects their land as security for payment of the non-ad valorem assessments through an individual financing agreement is unique and fundamental to reasonably attracting funding secured by assessments for energy efficiency, renewable energy or wind resistant improvements.

(G) Accordingly, a simplified and standardized state-wide program will offer efficiencies, economies of scale, and uniformity that can best attract a stream of financing and uniform program implementation and avoid administrative burdens and inefficient expenditures by local governments throughout Florida. The approach embodied in this Charter Agreement allows the local governments executing this Charter Agreement to act initially as 'incorporators' to create a focused single legal entity which minimizes their involvement and exposure in a manner similar to that of an incorporator in the corporate sense. Thereafter, any local government in Florida authorized to impose these types of voluntary assessments for energy efficiency, renewable energy or wind resistant Qualifying Improvements could 'subscribe' to the uniform processes and procedures set forth by the separate legal entity created by this Charter Agreement.

(H) Each Subscribing Local Government would simply authorize the availability of the program to property owners in its jurisdiction and agree to use a standardized process for imposing and securing proceeds under the non-ad valorem assessments authorized by the Supplemental Act as property owners work with a third party administrator or other agent of the Agency responsible for bringing owners and contractors together to facilitate the provision, funding, and financing of Qualifying Improvements.

(I) This approach requires a match of demand by individual property owners, both residential and commercial, to the reservoir of qualified labor, tradesmen and vendors in communities throughout Florida. This approach also requires education of qualified labor, tradesman and vendors in how to effectively serve a new market. Facilitation by creating uniform and standardized approaches and developing financing underwritten voluntarily by

individual property owners will not only address energy efficiency, renewable energy, and/or wind resistance burdens and benefits, but will stimulate a substantial and meaningful flow of private sector economic activity and new job creation.

(J) The creation and establishment of the Florida PACE Funding Agency will minimize duplication of effort and unnecessary government exposure or involvement, efficiently facilitate administration in only communities that choose to employ or subscribe to the Agency's facilitative services in order to make available uniform and credible funding and financing for individual property owners wishing to participate. In addition, the creation and establishment of the Florida PACE Funding Agency will convert a resource of unused trade and construction skill-sets into productive new private sector job markets, while taking advantage of guidelines, safeguards and implementation authorization provided by the Legislature in the Supplemental Act.

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ARTICLE II
THE AGENCY

SECTION 2.01. ESTABLISHMENT AND CREATION.

(A) There is hereby created and established the "Florida PACE Funding Agency," a separate legal entity and public body and unit of local government with all of the privileges, benefits, powers and terms provided for herein and by law, and as defined herein as the "Agency."

(B) Initial membership in and the Incorporators of the Agency shall consist of those local governments executing this Charter Agreement as Incorporators. To the extent permitted by Section 163.01, Florida Statutes, additional members may be included or deleted by amendment hereto approved by all member local governments of the Agency and the governing body of the Agency. As a condition to membership in the Agency, each member shall be a municipality or county, or other government permitted by the Supplemental Act to enter into financing agreements as provided for therein.

(C) The boundaries or jurisdiction of the Agency shall embrace and only include the territory within any local government subscribing to and authorizing the Agency by resolution to act, provide its services, and conduct its affairs within such subscribing local government's boundaries and jurisdiction.

(D) A municipality or county or other government permitted by the Supplemental Act to enter into financing agreements as provided for therein need not be a local government member in or of the Agency to subscribe and authorize the Agency by resolution and Subscription Agreement to act, provide its services, and conduct its affairs within the subscribing local government's boundaries and jurisdiction.

(E) The Agency is created for purposes set forth in Section 163.01(7)(g), Florida Statutes, and this Charter Agreement as the same may be amended from time to time, in order to facilitate, administer, implement and assist in providing Qualifying Improvements, enter into Subscription Agreements and other agreements with Subscribing Local Governments, facilitate financing agreements and non-ad valorem assessments only on properties subjected to same by the record owners thereof, develop funding and financing markets, develop structures and procedures to finance Qualifying Improvements, and to take any actions associated therewith or necessarily resulting therefrom, as contemplated by the Supplemental Act as the same may be amended from time to time.

(F) The Agency charter created by this Charter Agreement may be amended only by written amendment hereto, or by special act of the Legislature, upon the consent by resolution of the governing bodies of the then members of the Agency.

(G) The mission of the Agency shall be to aspire to and undertake, cause and/or perform all such acts as shall be necessary to provide a uniform and efficient local platform capable of securing economies of scale and uniform implementation on a state-wide basis if and

when embraced by individual local governments to facilitate the provision, funding and financing of Qualifying Improvements.

SECTION 2.02. AUTHORITY TO ADMINISTER THE PROVISION, FUNDING AND FINANCING OF QUALIFYING IMPROVEMENTS SUBJECT TO LOCAL GOVERNMENT SUBSCRIPTION AND CONSENT. By resolution of the governing bodies of each local government affected and as implemented pursuant to a Subscription Agreement, all power and authority available to the Agency under this Charter Agreement, general law, including without limitation, Chapters 163, 189 and 197, Florida Statutes, shall be deemed to be authorized and may be implemented by the Agency within the boundaries of each of the Subscribing Local Governments. The Agency shall not act, provide its services, or conduct its affairs within any local government's jurisdiction without first entering into a Subscription Agreement with such local government.

SECTION 2.03. GOVERNANCE.

(A) The governing body of the Agency shall consist of a number of persons equal to one (1) member appointed by each Incorporator, and in the event of an even number of Incorporators, one (1) member selected jointly by all Incorporators, each of whom shall serve a staggered term of three (3) years commencing on October 1, provided the procedure for appointment of members of the Board of Directors and their initial terms of office shall be as follows:

(1) Board Director No. 1 to be appointed by the first Incorporator to execute this Charter Agreement shall serve for an initial term of approximately two (2) years ending on September 30, 2013.

(2) Board Director No. 2 to be appointed by the second Incorporator to execute this Charter Agreement shall serve for an initial term of approximately three (3) years, ending on September 30, 2014.

(3) Board Director No. 3 to be appointed by the third Incorporator to execute this Charter Agreement, or if otherwise necessary, jointly appointed by all Incorporators, shall serve an initial term of approximately four (4) years, ending September 30, 2015.

(4) All members of the Board of Directors shall be qualified electors of the State of Florida.

(B) Members of the Board of Directors shall serve no more than three (3) consecutive three (3) year terms, not including any initial term of less than three (3) years. Provided, however, they shall hold office for the terms for which they were appointed until their successors are chosen and qualified.

(C) Upon the occasion of a vacancy for any reason in the term of office of a member of the Board of Directors, which vacancy occurs prior to the replacement of the Board member by appointment and which remains unfilled for thirty (30) days after such vacancy due to the failure of the respective Incorporator's governing body to duly appoint a successor who is a qualified elector of the State as provided in subsection (1) hereof, a successor shall be appointed

by a majority of a quorum of the remaining Board of Directors at a meeting held for such purposes. Any person so appointed to fill a vacancy shall be appointed to serve only for the unexpired term or until a successor is duly appointed, which ever first occurs.

(D) The Board of Directors shall elect a Chairperson, Vice-Chairperson, Secretary, Assistant Secretary and such other officers of the Agency as may be hereafter designated and authorized by the Board of Directors, each of whom shall serve for one (1) year commencing as soon as practicable after October 1 and until their successor is chosen. The Chairperson, the Vice-Chairperson, or the Secretary shall conduct the meetings of the Agency and perform such other functions as herein provided. The Chairperson and Vice-Chairperson shall take such actions, and have all such powers and sign all documents on behalf of the Agency in furtherance of this Charter Agreement or as may be approved by resolution of the Board of Directors adopted at a duly called meeting. The Vice-Chairperson, in the Chairperson's absence, shall preside at all meetings. The Secretary, or the Secretary's designee, shall keep minutes of all meetings, proceedings and acts of the Board of Directors, but such minutes need not be verbatim. Copies of all minutes of the meetings of the Agency shall promptly be sent by the Secretary, or the Secretary's designee, to all members of the Board of Directors and to each general purpose local government which is an Incorporator or Subscribing Local Government. The Secretary and any Assistant Secretary may also attest to the execution of documents. The Secretary and any Assistant Secretary, or other person duly designated by resolution of the Board, shall have such other powers as may be approved by resolution of the Board of Directors adopted at a duly called meeting.

(E) The Board of Directors shall have those administrative duties set forth in this Charter Agreement and Chapter 189, Florida Statutes, as the same may be amended from time to time. Any certificate, resolution or instrument signed by the Chairperson, Vice-Chairperson or such other person on behalf of the Agency as may hereafter be designated and authorized by resolution of the Board of Directors shall be evidence of the action of the Agency and any such certificate, resolution or other instrument so signed shall be conclusively presumed to be authentic.

(F) Except as provided in this subsection, the members of the Board of Directors shall receive no compensation for their services. Each member of the Board of Directors may be reimbursed for expenses as provided in Section 112.061, Florida Statutes, or, as an alternative, receive a per diem to compensate each member for the inconvenience of travel and associated expenses not to exceed $350 per calendar day or as otherwise approved by the Board of Directors for travel on Agency business. Provided, however, such expenses or per diem shall accrue and only be payable as, if and when funds to pay same are available to the Agency.

(G) A majority of the Board of Directors shall constitute a quorum for the transaction of business of the Agency. The affirmative vote of the majority of the members of the Board of Directors present and voting (exclusive of any member having a conflict) shall be necessary to transact business.

(H) Prior to the appointment of the entire Board of Directors and the first organizational meeting thereof, the affairs of the Agency shall be governed by joint resolution of

the Incorporators or the then members of the Agency. In such interim period, however long, such acts shall be necessarily made on behalf of and shall be binding upon the Agency by joint resolution of said Incorporators or the then members. Such acts shall be deemed actions of the governing body of the Agency. In this context "joint resolution" shall mean any one or a set of resolutions adopting concurrent direction and authorization under the provisions hereof, and may be evidenced by resolutions executed separately, jointly or with counterpart or other similar provisions, and do not require the joint meeting of the Incorporators. Such actions shall be exclusively on behalf of the Agency, and no liability or responsibility therefor shall be imputed to said Incorporators or the then members. Such acts may include any power or authority otherwise available to the Agency and shall include, among other things, approval of such Financing Documents as are deemed advisable to file all necessary validation or other pleadings, and undertake appellate matters if necessary, in order to obtain validation of the authority for the Agency to undertake its purpose and mission and issue its Obligations associated there with, the retention of counsel, the procurement of other professional services and all other reasonable acts to initiate and validate the purpose, mission and authority of the Agency, with the cost thereof accruing exclusively to and only payable by the Agency as, if and when funds from or associated with the programs of the Agency become available. All such actions taken or instruments executed on behalf of the Agency shall be valid and binding in every respect upon the Agency as if duly executed by the Chairman on behalf of the Board of Directors or any other person authorized by the Board of Directors to execute same.

SECTION 2.04. MEETINGS; NOTICE. Unless determined otherwise by the Board of Directors, the Board of Directors shall hold meetings pursuant to Section 189.417, Florida Statutes. Meetings may be conducted in any reasonably noticed and lawful location within the State.

SECTION 2.05. REPORTS; BUDGETS; AUDITS. Unless determined otherwise by the Board of Directors, the Agency shall prepare and submit reports, budgets and audits as provided in Sections 189.415 and 189.418, Florida Statutes.

SECTION 2.06. POWERS, FUNCTIONS AND DUTIES.

(A) The Agency shall have all powers to carry out the purposes of this Charter Agreement and the functions and duties provided for herein, including the following powers which shall be in addition to and supplementing any other privileges, benefits and powers granted by this Charter Agreement or by law:

(1) To execute all contracts and other documents, adopt all proceedings and perform all acts determined by the Board of Directors as necessary or advisable to carry out the purpose or mission of the Agency, the purposes of this Charter Agreement or any Subscription Agreement with a local government as contemplated hereby. Unless otherwise provided for herein or authorized by the Board of Directors, the Chairperson or Vice-Chairperson shall execute contracts and other documents on behalf of the Board of Directors.

(2) To provide for the provision, funding, and financing of Qualified Improvements in any manner or means determined by the Board of Directors.

(3) To contract for the service of administrators, accountants, attorneys and any other experts, advisors, or consultants, and such other professionals, agents and employees as the Board of Directors may require or deem appropriate from time to time.

(4) To contract for such services, costs, goods, facilities, or other costs or expenses on a contingent, at risk or deferred basis with the providers, purveyors, or vendors thereof with the express understanding that payment therefore may be evidenced by warrants only due or payable from the Agency (and absolutely no other person, entity or Incorporator) as, if and when identified funds to pay same are available to the Agency.

(5) To reimburse any Incorporator for actual and verifiable costs and expenses reasonably associated with the creation and establishment of the Agency, if any, as, if and when identified funds to repay same are available to the Agency.

(6) To adopt all necessary rules, regulations, procedures, or standards by resolution.

(7) To exercise jurisdiction, control and supervision over the provision, funding, and financing of Qualified Improvements and to make and enforce such rules, procedures and regulations applicable thereto as may be, in the judgment of the Board of Directors, necessary or desirable for the efficient operation of the Agency in accomplishing the purpose and mission of the Agency, and purposes of this Charter Agreement.

(8) To enter into interlocal agreements or join with any other special purpose or general purpose local governments, public agencies or authorities in the exercise of common powers.

(9) To contract with private or public entities or persons.

(10) Subject to such provisions and restrictions as may be set forth in any Financing Document, to enter into contracts with the government of the United States or any agency or instrumentality thereof, the State, or with any municipality, county, district, authority, political subdivision, private corporation, partnership, association or individual providing for or relating to the provision, funding, or financing of Qualifying Improvements and any other matters relevant thereto or otherwise necessary to effect the purpose and mission of the Agency and purposes of this Charter Agreement.

(11) To receive and accept from any federal or State agency, grants or loans for or in aid of the planning, administration, provision or financing of Qualifying Improvements, and to receive and accept aid or contributions or loans from any other source of either money, labor or other things of value, to be held, used and applied only for the purpose for which such grants, contributions or loans may be made.

(12) To purchase, finance, assume the ownership of, lease, operate, manage and/or control of any administrative facilities, including all equipment or personal property deemed necessary by the Board of Directors to achieve the purpose or mission of the Agency.

(13) To appoint advisory boards and committees to assist the Board of Directors in the exercise and performance of the powers and duties provided in this Charter Agreement.

(14) To sue and be sued in the name of the Agency and participate as a party in any civil, administrative or other action.

(15) To provide or contract for record retention and public records administration.

(16) To adopt and use a seal and authorize the use of a facsimile thereof.

(17) To employ or contract with any public or private entity or person to administer, manage, operate or provide professional services or other efforts associated with any Agency activity, program or facilities, or any portion thereof, upon such terms as the Board of Directors deems appropriate.

(18) Subject to such provisions and restrictions as may be set forth in any Financing Document, to own, use, manage or otherwise dispose of any administrative facilities, equipment or personal property, or any portion thereof, upon such terms as the Board of Directors deems appropriate.

(19) Subject to such provisions and restrictions as may be set forth in any Financing Document, to acquire, own, manage, or otherwise dispose of carbon, renewable energy or similar credits upon such terms as the Board of Directors deems appropriate; and use the proceeds of same, if any materialize, to underwrite start-up or on-going program costs, payment to professionals for deferred or contingent fee or other work or retainers, the advancement of educational programs, deposit into any general or performance assurance fund and/or payment of other reasonable costs or expenditure to advance the mission and purpose of the Agency.

(20) To acquire, by purchase, gift, devise, tax sale certificate or otherwise, and to dispose of, real or personal property, or any estate therein in the course of the purpose or mission of the Agency.

(21) To make and execute contracts or other instruments necessary or convenient to the exercise of its powers.

(22) To maintain an office or offices within the State at such place or places as the Board of Directors may designate from time to time.

(23) To utilize and employ technology and innovation to the maximum extent possible, unless otherwise inconstant with general law, in conducting the meetings and affairs of the Agency.

(24) To lease, as lessor or lessee, to or from any person, firm, corporation, association or body, public or private, facilities or property of any nature to carry out any of the purposes authorized by law or this Charter Agreement.

(25) To borrow money and issue bonds, certificates, warrants, notes, obligations or other evidence of indebtedness of any kind.

(26) To assist and act on behalf of any local government to assess, levy, impose, collect and enforce non-ad valorem assessments authorized by Section 163.08, Florida Statutes, if expressly authorized to do so by the local government in which the lands assessed are located. Such non-ad valorem assessments may only be as described in the Supplemental Act.

(27) To contract, apply for and accept grants, loans, assignments and subsidies from any governmental entity for the provision, funding and financing of Qualifying Improvements, and to comply with all requirements and conditions imposed in connection therewith.

(28) To the extent allowed by law and to the extent required to effectuate the purposes of this Charter Agreement, to have and exercise all privileges, immunities and exemptions accorded municipalities and counties of the State under the provisions of the constitution and laws of the State.

(29) To adopt investment policies from time to time and/or invest its moneys in such investments as directed by the Board of Directors in a manner which shall be consistent in all instances with the applicable provisions of the Financing Documents and State law.

(30) To purchase such insurance, bonds, sureties, contracts of indemnity, or similar facilities of any kind or nature as it deems appropriate.

(31) To do all acts and to exercise all of the powers necessary, convenient, incidental, implied or proper, in connection with any of the powers, duties, obligations or purposes authorized by this Charter Agreement or by law.

(B) The Board of Directors may appoint or contract with one or more persons or entities to act as the third party administrator for the Agency having such functions, duties, and responsibilities to implement the services and affairs of the Agency as the Board of Directors may prescribe.

(C) The Board of Directors may appoint or contract with a person or entity to act as executive director of the Agency having such official title, functions, duties, and powers as the chief administrative officer of the Agency as the Board of Directors may prescribe. The Board of Directors shall appoint a person or entity to act as the legal counsel for the Agency. The executive director and legal counsel shall each answer directly to the Board of Directors. The third party administrator shall answer to the executive director, unless otherwise directed by the Board of Directors. Neither the executive director, the third party administrator, legal counsel, nor any other employee of the Agency shall be a member of the Board of Directors.

(D) The Board of Directors (or the executive director prior to the first meeting of Board of Directors) may use or employ any procurement procedures or approach not otherwise inconsistent with general law.

(E) The Board of Directors (or the executive director prior to the first meeting of Board of Directors) may request proposals, or receive unsolicited proposals; provided, however, notice thereof shall be provided to each then Incorporator and each Subscribing Local Government then subject to a Subscription Agreement with the Agency.

(F) The executive director shall be authorized to execute and deliver on behalf of the Agency such documents and to take such actions as shall be authorized from time to time by the governing body of the Agency. The executive director, or other person or entity otherwise specifically directed to do so, is hereby directed and authorized to undertake such reasonable actions to request proposals, receive unsolicited proposals or employ any procurement procedures necessary to reasonably and timely advance the mission and purpose of the Agency, and thereafter make recommendations to the Board of Directors.

(G) In exercising the powers conferred by this Charter Agreement, the Board of Directors shall act by resolution or motion made and adopted at duly noticed and publicly held meetings in conformance with applicable law.

(H) The provisions of Chapter 120, Florida Statutes, shall not apply to the Agency.

(I) However, nothing herein shall affect the ability of the Agency to engage in or pursue any civil or administrative action or remedies, including but not limited to any proceeding or remedy available under Chapter 120, Florida Statutes, or its successor in function.

SECTION 2.07. CREATION OF STATE, COUNTY OR MUNICIPAL DEBTS PROHIBITED. The Agency shall not be empowered or authorized in any manner to create a debt as against the State, any county or any municipality, and may not pledge the full faith and credit of the State, any county, or any municipality. All revenue bonds or debt obligations shall contain on the face thereof a statement to the effect that the state, county or any municipality shall not be obligated to pay the same or interest thereon and that they are only payable from Agency revenues or the portion thereof for which they are issued and that neither the full faith and credit nor the taxing power of the state or of any political subdivision thereof is pledged to the payment of the principal of or the interest on such bonds. The issuance of revenue or refunding bonds under the provisions of law or this Charter Agreement shall not directly or indirectly or contingently obligate the state, or any county or municipality to levy or to pledge any form of taxation whatever therefor or to make any appropriation for their payment.

SECTION 2.08. ADOPTION OF RATES, FEES AND CHARGES.

(A) The Board of Directors may adopt from time to time by resolution such rates, fees or other charges for the provision of the services of the Agency to be paid by the record owner of any property, pursuant to a financing agreement described in the Supplemental Act.

(B) Such rates, fees and charges shall be adopted and revised so as to provide moneys, which, together with other funds available for such purposes, shall be at least sufficient at all times to pay the expenses of administering, managing, and providing for the services and administration of the activities of the Agency, to pay costs and expenses provided for by law or

this Charter Agreement and the Financing Documents (including the funding of any financing or operating reserves deemed advisable by the Agency), and to pay the principal and interest on the Obligations as the same shall become due and reserves therefor, and to provide a reasonable margin of safety over and above the total amount of such payments. Notwithstanding any other provision in this Charter Agreement, such rates, fees and charges shall always be sufficient to comply fully with any covenants contained in the Financing Documents. The Agency shall charge and collect such rates, fees and charges so adopted and revised, and such rates, fees and charges shall not be subject to supervision or regulation by any other commission, board, bureau, agency or other political subdivision of the State.

(C) Such rates, fees and charges may vary from jurisdiction to jurisdiction, but shall be just and equitable and uniform at the time of imposition for the record owners of each subscribing local governmental jurisdiction electing to enter into any financing agreement described in the Supplemental Act within the same class, and may be based upon or computed upon any factor (including, by way of example and not limitation, distinguishing between residential and non-residential customers or uses, distinguishing between variable costs of administrative services over time) or combination of factors affecting the demand or cost of the services furnished or provided to administer the services and affairs of the Agency as may be determined by the Board of Directors from time to time.

(D) Notwithstanding anything in this Charter Agreement to the contrary, the Agency may establish a general fund and/or performance assurance account into which moneys may be deposited from an annual surcharge not to exceed one percent (1%) upon any assessments, or any rates, fees and charges imposed, pledged to or collected by the Agency. Any moneys deposited to such general fund account from such a surcharge represent a fair and reasonable cost of administration and shall be considered legally available for any lawful purpose approved by the Board of Directors. Moneys in such general fund and/or performance assurance account may be used to pay for or reimburse initial costs and expenses advanced or associated with start up costs, feasibility studies, economic analysis, financial advisory services, program development or implementation costs or enhancements, public education, administration, quality control, vendor procurement, and any other lawful purpose approved by the Board of Directors.

SECTION 2.09. BONDS AND OBLIGATIONS.

(A) The Board of Directors shall have the power and it is hereby authorized to provide pursuant to the Financing Documents, at one time or from time to time in one or more series, for the issuance of Obligations of the Agency, or notes in anticipation thereof, for one or more of the following purposes:

(1) Paying all or part of the cost of one or more Qualifying Improvements,

(2) Refunding any bonds or other indebtedness of the Agency,

(3) Assuming or repaying the indebtedness relating to Qualifying Improvements,

(4) Setting aside moneys in a reserve or performance assurance account,

(5) Funding a debt service reserve account,

(6) Capitalizing interest on the Obligations,

(7) Paying costs of issuance relating to the Obligations, and

(8) Any other purpose relating to the purpose or mission of the Agency or this Charter Agreement.

(B) The principal of and the interest on each series of Obligations shall be payable from the Pledged Funds, all as determined pursuant to the Financing Documents. The Agency may grant a lien upon and pledge the Pledged Funds in favor of the holders of each series of Obligations in the manner and to the extent provided in the Financing Documents. Such Pledged Funds shall immediately be subject to such lien without any physical delivery thereof and such lien shall be valid and binding as against all parties having claims of any kind in tort, contract or otherwise against the Agency.

(C) The Obligations of each series shall be dated, shall bear interest and such rate or rates, shall mature at such time or times not exceeding forty (40) years from their date or dates, may be made redeemable before maturity, at the option of the Agency, at such price or prices and under such terms and conditions, all as shall be determined by the Board of Directors pursuant to the Financing Documents. The Board of Directors shall determine the form of the Obligations, the manner of executing such Obligations, and shall fix the denomination of such Obligations and the place of payment of the principal and interest, which may be at any bank or trust company within or without the State. In case any officer whose signature or facsimile of whose signature shall appear on any Obligations shall cease to be such officer before the delivery of such Obligations, such signature or such facsimile shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until delivery. The Board of Directors may sell Obligations in such manner and for such price as it may determine to be in the best interest of the Agency in accordance with the terms of the Financing Documents. In addition to the Pledged Funds, the Obligations may be secured by such credit enhancement as the Board of Directors determines to be appropriate pursuant to the Financing Documents. The Obligations may be issued as capital appreciation bonds, current interest bonds, term bonds, serial bonds, variable bonds or any combination thereof, all as shall be determined pursuant to the Financing Documents.

(D) Prior to the preparation of definitive Obligations of any series, the Board of Directors may issue interim receipts, interim certificates or temporary Obligations, exchangeable for definitive Obligations when such Obligations have been executed and are available for delivery. The Board of Directors may also provide for the replacement of any Obligations which shall become mutilated, or be destroyed or lost. Obligations may be issued without any other proceedings or the happening of any other conditions or things than those proceedings, conditions or things which are specifically required by this Charter Agreement, the Financing Documents or other applicable laws.

(E) The Board of Directors may enter into such swap, hedge or other similar arrangements relating to any Obligations as it deems appropriate.

(F) The proceeds of any series of Obligations shall be used for such purposes, and shall be disbursed in such manner and under such restrictions, if any, as the Board of Directors may provide pursuant to the Financing Documents.

(G) The Financing Documents may also contain such limitations upon the issuance of additional Obligations as the Board of Directors may deem appropriate, and such additional Obligations shall be issued under such restrictions and limitations as may be prescribed by such Financing Documents. The Financing Documents may contain such provisions and terms in relation to the Obligations and the Pledged Funds as the Board of Directors deems appropriate and which shall not be inconsistent herewith.

(H) Obligations shall not be deemed to constitute a general obligation debt of the Agency or a pledge of the faith and credit of the Agency, but such Obligations shall be payable solely from the Pledged Funds and any moneys received from the credit enhancers of the Obligations, in accordance with the terms of the Financing Documents. The issuance of Obligations shall not directly or indirectly or contingently obligate the Agency to levy or to pledge any form of ad valorem taxation whatsoever therefor. No holder of any such Obligations shall ever have the right to compel any exercise of the ad valorem taxing power on the part of the Agency or any incorporating local government or subscribing local government to pay any such Obligations or the interest thereon or the right to enforce payment of such Obligations, or the interest thereon, against any property of the Agency, nor shall such Obligations constitute a charge, lien or encumbrance, legal or equitable, upon any property of the Agency, except the Pledged Funds in accordance with the terms of the Financing Documents.

(I) All Pledged Funds shall be deemed to be trust funds, to be held and applied solely as provided in the Financing Documents. Such Pledged Funds may be invested by the Agency in such manner as provided in the Financing Documents.

(J) Any holder of Obligations, except to the extent the rights herein given may be restricted by the Financing Documents, may, either at law or in equity, by suit, action, mandamus or other proceeding, protect and enforce any and all rights under the laws of the State or granted hereunder or under the Financing Documents, and may enforce and compel the performance of all agreements or covenants required by this Charter Agreement, or by such Financing Documents, to be performed by the Agency or by any officer thereof.

(K) From time to time the Agency may issue warrants, payable not from Pledged Revenues, but as, if and when other legally available funds become available; or as otherwise authorized under the Financing Documents.

(L) The Obligations may be validated, at the sole discretion of the Board of Directors, pursuant to Chapter 75, Florida Statutes. Obligations may be issued pursuant to and secured by a resolution of the Board of Directors. Provided, however, that the initial series of Obligations issued, together with the validity of this Charter Agreement and all of its terms, provisions and powers, the Pledged Revenues, the power and authority of the Agency and any subscribing local government to enter into a Subscription Agreement, the provision, funding, and financing of Qualifying Improvements, the power and authority for local governments to enter into

financing agreements and impose non-ad valorem assessments and the status of such non-ad valorem assessments as a lien of equal dignity to taxes and assessments as described in the Supplemental Act, and all matters associated therewith shall be validated pursuant to Chapter 75, Florida Statutes, as soon as practicable after execution hereof.

(M) In addition to the other provisions and requirements of this Charter Agreement, any Financing Documents may contain such provisions as the Board of Directors deems appropriate.

(N) All Obligations issued hereunder shall not be invalid for any irregularity or defect in the proceedings for the issuance and sale thereof and shall be incontestable in the hands of bona fide purchasers for value. No proceedings in respect to the issuance of such Obligations shall be necessary except such as are required by law, this Charter Agreement or the Financing Documents. The provisions of the Financing Documents shall constitute an irrevocable contract between the Agency and the holders of the Obligations issued pursuant to the provisions thereof.

(O) Holders of Obligations shall be considered third party beneficiaries hereunder and may enforce the provisions of this Charter Agreement or general law.

SECTION 2.10. MERGER; DISSOLUTION.

(A) In no event shall a merger involving the Agency be permitted, unless otherwise approved by resolution of the local governments which are then members of the Agency pursuant to this Charter Agreement.

(B) The dissolution of the Agency shall occur by law and transfer the title to all property owned by the Agency in a manner consistent with Chapter 189, Florida Statutes, unless (1) the Agency is merged into an independent special district as acknowledged herein, (2) this Charter Agreement is terminated pursuant to Section 3.02 hereof, or (3) as otherwise provided in a dissolution plan approved and adopted by resolution of the local governments which are then members of the Agency pursuant to this Charter Agreement.

SECTION 2.11. ENFORCEMENT AND PENALTIES. The Board of Directors or any aggrieved person may have recourse to such remedies in law and equity as may be necessary to ensure compliance with the provisions of this Charter Agreement, including injunctive relief to mandate compliance with or enjoin or restrain any person violating the provisions of this Charter Agreement and any bylaws, resolutions, regulations, rules, codes, and orders adopted under this Charter Agreement, and the court shall, upon proof of such failure of compliance or violation, have the duty to issue forthwith such temporary and permanent injunctions as are necessary to mandate compliance with or prevent such further violations thereof.

SECTION 2.12. TAX EXEMPTION. As the exercise of the powers conferred by this Charter Agreement to effect the purposes of this Charter Agreement constitute the performance of essential public functions, and as the programs of the Agency constitute public purposes as more particularly articulated in the Supplemental Act, all assets and properties of

the Agency and all Obligations issued hereunder and interest paid thereon and all assessment proceeds, rates, fees, charges, and other revenues derived by the Agency from the activities, services, and programs provided for by this Charter Agreement or otherwise shall be exempt from all taxes by the State or any political subdivision, agency, or instrumentality thereof, except that this exemption shall not apply to interest earnings subject to taxation under Chapter 220, Florida Statutes.

[Remainder of page intentionally left blank.]

ARTICLE III
GENERAL PROVISIONS

SECTION 3.01. INTERLOCAL AGREEMENT PROVISIONS. This Charter Agreement constitutes a joint exercise of power, privilege or authority by and between the Incorporators and shall be deemed to be an "interlocal agreement" within the meaning of the Florida Interlocal Cooperation Act of 1969, as amended. This Charter Agreement shall be filed with the applicable clerk of the circuit court as provided by Section 163.01(11), Florida Statutes.

SECTION 3.02. TERM OF AGREEMENT; DURATION OF AGREEMENT.

(A) The term of this Charter Agreement shall commence as of the date first above written, and shall continue for so long as the Agency shall exist.

(B) The Agency shall continue to exist so long as the Agency has Obligations outstanding. At such time as no Obligations are outstanding, the Agency may dissolve by a majority vote of the Board of Directors in a manner provided for herein.

(C) So long as the Agency has Obligations outstanding, the members of the Agency covenant not to undertake any act or action to withdraw from or otherwise terminate this Charter Agreement; and any such action shall not be effective if such action would leave less than two (2) members.

SECTION 3.03. AMENDMENTS AND WAIVERS.

(A) Except as otherwise provided herein, no amendment, supplement, modification or waiver of this Charter Agreement shall be binding unless executed in writing by the Agency and the local governments which are then members of the Agency pursuant to this Charter Agreement.

(B) To the extent the Agency has no outstanding bonds, Obligations or other evidence of indebtedness, this Charter Agreement may be amended or modified or provisions hereto waived upon the written consent of all the then members of the Agency as more particularly described in Section 2.01(B) hereof.

(C) Notwithstanding any other provision herein interpreted to the contrary, to the extent the Agency has outstanding Obligations or other evidence of indebtedness, this Charter Agreement may not be amended or modified in any way that is materially adverse to holders of such Obligations or other evidence of indebtedness without the consent in writing of the holders of at least two-thirds (2/3) or more in principal amount of such Obligations or other evidence of indebtedness then outstanding, or any trustee or insurer duly authorized to provide such consent on behalf of such holders.

SECTION 3.04. NOTICES.

(A) All notices, certificates or other communications hereunder shall be sufficiently given and shall be deemed given when hand delivered (or confirmed electronic facsimile transmission) or mailed by registered or certified mail, postage prepaid, or sent by nationally

recognized overnight courier (with delivery instructions for "next business day" service) to the Incorporators at the addresses appearing on their respective signature page.

(B) Upon execution hereof all notices shall also be sent to the Agency, to the attention of its Chair (or executive director prior to the first meeting of Board of Directors), with a separate copy to the legal counsel of the Agency.

(C) Any of the Incorporators (including the Agency after execution hereof by the Incorporators) may, by notice in writing given to the others, designate any further or different addresses to which subsequent notices, certificates or other communications shall be sent. Any notice shall be deemed given on the date such notice is delivered by hand (or confirmed electronic facsimile transmission) or three days after the date mailed.

SECTION 3.05. IMMUNITY; LIMITED LIABILITY.

(A) All of the privileges and immunities from liability and exemptions from laws, ordinances and rules which apply to the activity of officials, officers, agents or employees of the general purpose local governments incorporating or by law deemed members of the Agency shall apply to the officials, officers, agents or employees of the Agency when performing their respective functions and duties under the provisions of this Charter Agreement.

(B) The Agency and the general purpose local governments incorporating or by law deemed members of the Agency are and shall be subject to Sections 768.28 and 163.01(9)(c), Florida Statutes, and any other provisions of Florida law governing sovereign immunity. Pursuant to Section 163.01(5)(o), Florida Statutes, such local governments may not be held jointly or severally liable for the torts of the officers or employees of the Agency, or any other tort attributable to the Agency or another member of the Agency, and that the Agency alone shall be liable for any torts attributable to it or for torts of its officers, employees or agents, and then only to the extent of the waiver of sovereign immunity or limitation of liability as specified in Section 768.28, Florida Statutes. The general purpose local governments incorporating or by law deemed members of the Agency intend that the Agency shall have all of the privileges and immunities from liability and exemptions from laws, ordinances, rules and common law which apply to the municipalities and counties of the State. Nothing in this Charter Agreement is intended to inure to the benefit of any third-party for the purpose of allowing any claim, which would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

(C) Neither any Incorporator nor any subsequent Subscribing Local Government shall in any manner be obligated to pay any debts, obligations or liabilities arising as a result of any actions of the Agency, the Board of Directors or any other agents, employees, officers or officials of the Agency, except to the extent otherwise mutually and expressly agreed upon, and neither the Agency, the Board of Directors nor any other agents, employees, officers or officials of the Agency have any authority or power to otherwise obligate one or more of the Incorporators, nor any subsequently Subscribing Local Government in any manner.

SECTION 3.06. BINDING EFFECT. To the extent provided herein, this Charter Agreement shall be binding upon the parties, their respective successors and assigns and shall inure to the benefit of the parties, their respective successors and assigns.

SECTION 3.07. SEVERABILITY. In the event any provision of this Charter Agreement shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof.

SECTION 3.08. EXECUTION IN COUNTERPARTS. This Charter Agreement may be simultaneously executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

SECTION 3.09. APPLICABLE LAW. This Charter Agreement shall be governed by and construed in accordance with the laws of the State of Florida.

SECTION 3.10. ENTIRE AGREEMENT. This Charter Agreement constitutes the entire agreement among the parties pertaining to the subject matter hereof, and supersedes all prior and contemporaneous agreements, understandings, negotiations and discussions of the parties, whether oral or written, and there are no warranties, representations or other agreements among the parties in connection with the subject matter hereof, except as specifically set forth herein.

[Remainder of page intentionally left blank.]

Incorporator Signature Page

IN WITNESS WHEREOF, the undersigned have caused this Charter Agreement to be duly executed and entered into as of this date.

BOARD OF COUNTY COMMISSIONERS OF FLAGLER COUNTY, FLORIDA

(SEAL)

By: _____
Chair

Date: June 20, 2014

ATTEST:

_____
Clerk

Notice Address: County Administrator
Flagler County
1769 E. Moody Blvd., Bldg. 2
Bunnell, Florida 32110

Incorporator Signature Page

IN WITNESS WHEREOF, the undersigned have caused this Charter Agreement to be duly executed and entered into as of this date.

THE CITY COMMISSION OF THE CITY OF KISSIMMEE, FLORIDA

(SEAL)

By: _____
Mayor

Date: June 22, 2011

ATTEST:

_____
City Clerk

Approved as to form and legality

_____
City Attorney

6/24/2011
Date

Notice Address: City Manager
City of Kissimmee
101 North Church Street, 5th Floor
Kissimmee, Florida 34741

CIRCUIT COURT SUUM CUIQUE FLAGLER COUNTY, FLORIDA
I HEREBY CERTIFY this to be a true
And correct copy of the original
GAIL WADSWORTH
CLERK OF COURTS
By _____ DC

EXHIBIT C

FINAL JUDGMENT

IN THE CIRCUIT COURT OF THE SECOND JUDICIAL CIRCUIT
IN AND FOR LEON COUNTY, FLORIDA

FLORIDA PACE FUNDING AGENCY, a public body corporate and politic,

Plaintiff,

vs.

THE STATE OF FLORIDA, AND ALL OF THE SEVERAL PROPERTY OWNERS, TAXPAYERS AND CITIZENS OF THE STATE OF FLORIDA, INCLUDING NON-RESIDENTS OWNING PROPERTY OR SUBJECT TO TAXATION THEREIN AND ALL OTHERS HAVING OR CLAIMING ANY RIGHT, TITLE OR INTEREST IN PROPERTY TO BE AFFECTED BY THE ISSUANCE OF THE BONDS HEREIN DESCRIBED, OR TO BE AFFECTED THEREBY, INCLUDING BUT NOT LIMITED TO THOSE OF FLAGLER COUNTY, FLORIDA, PINELLAS COUNTY, FLORIDA, AND THE CITY OF KISSIMMEE, FLORIDA,

Defendants.

CIVIL ACTION NO. 2011-CA-1824

VALIDATION OF NOT TO EXCEED $2,000,000,000 FLORIDA PACE FUNDING AGENCY REVENUE BONDS (ENERGY AND WIND RESISTANCE IMPROVEMENT FINANCE PROGRAM), VARIOUS SERIES

FILED
2011 AUG 25 A 9:23

FINAL JUDGMENT

The above and foregoing cause has come to final hearing on the date and at the time and place set forth in the Order to Show Cause heretofore issued by this Court on the complaint for validation filed by Plaintiff Florida PACE Funding Agency against the State of Florida and the property owners, taxpayers and citizens thereof, including those of Flagler County, Florida, Pinellas County, Florida and the City of Kissimmee, Florida and

including non-residents owning property or subject to taxation therein and all others having or claiming any right, title or interest in property to be affected by the Plaintiff's issuance of not exceeding $2,000,000,000 in aggregate principal amount at any one time outstanding of the Florida PACE Funding Agency Revenue Bonds (Energy and Wind Resistance Improvement Finance Program), in various series (the "Bonds"), hereinafter described, or to be affected in any way thereby, and said cause having duly come on for final hearing, and the Court having considered the same and heard the evidence and being fully advised in the premises, finds as follows:

FIRST. The Plaintiff is authorized under Chapter 75, Florida Statutes, and Chapter 163, Part I, Florida Statutes, including section 163.01(7)(g)9., Florida Statutes, to file its Complaint in this Court to determine the validity of the Bonds, the pledge of revenues for the payment thereof, the validity of the non-ad valorem assessments which shall comprise all or in substantial part the revenues pledged, the proceedings relating to the issuance thereof and all matters connected therewith. All actions and proceedings of the Plaintiff in this cause are in accordance with Chapter 75, Florida Statutes, and Chapter 163, Part I, Florida Statutes, each as amended.

SECOND. The Plaintiff is a valid and legally existing public body corporate and politic within the State of Florida created pursuant to the Florida Interlocal Cooperation Act of 1969, Chapter 163, Part I, Florida Statutes, as amended (the "Interlocal Act") and pursuant to the provisions of a certain duly filed Interlocal Agreement Relating to the

Establishment of the Florida PACE Funding Agency dated as of June 21, 2011 (the "Charter Agreement") initially between Flagler County, Florida and the City of Kissimmee, Florida and subsequently between any additional counties or municipalities joining the Plaintiff as a member. As the context requires, the term "Incorporators" as used herein shall collectively include Flagler County, Florida; the City of Kissimmee, Florida; and any additional counties or municipalities joining the Plaintiff as a member. Such Charter Agreement was received into evidence as Plaintiff's Exhibit "1".

THIRD. Execution of the Charter Agreement was authorized by concurrent resolutions of the Incorporators adopted on June 20, 2011 with respect to Flagler County and June 21, 2011 with respect to the City of Kissimmee (collectively, the "Joint Resolutions"). The Joint Resolutions also provided for and approved Pinellas County, Florida, to subsequently join and become a local government member of the Plaintiff upon adoption by Pinellas County of a resolution substantially similar to and confirming the Joint Resolutions. Copies of the Joint Resolutions were received into evidence as Plaintiff's Exhibit "2".

FOURTH. The Charter Agreement is authorized by the Joint Resolutions, the Interlocal Act and Section 163.08(5), Florida Statutes, has been lawfully entered into and executed by the Incorporators and constitutes a legal, valid and binding agreement of such Incorporators.

FIFTH. The Joint Resolutions lawfully provided for adoption on behalf of the Plaintiff of a Master Bond Resolution setting forth the terms and conditions pursuant to which the Plaintiff shall issue its revenue bonds or other forms of indebtedness. A copy of the Master Bond Resolution was received into evidence as Plaintiff's Exhibit "3".

SIXTH. Authority is conferred upon the Plaintiff, under and by virtue of the laws of the State of Florida, particularly Chapter 166, Part II, Florida Statutes, Chapter 159, Part I, Florida Statutes, Chapter 125, Part I, Florida Statutes, Chapter 163, Part I, Florida Statutes, and other applicable provisions of law to issue its revenue bonds or other debt obligations and advance the proceeds thereof to any Florida "local government" as defined by Section 163.08(2), Florida Statutes, who subscribe to the Plaintiff's programs authorizing the Plaintiff to operate within each such local government's jurisdiction for purposes of financing "qualifying improvements" as defined in section 163.08(2)(b), Florida Statutes.

SEVENTH. The Bonds, or other debt obligations issued by the Plaintiff, enable the Plaintiff, together with subscribing local governments, to lawfully create and administer finance programs related to the provision of (i) energy conservation and efficiency improvements, (ii) renewable energy improvements, and (iii) wind resistance improvements, which are "qualifying improvements" as such defined in Section 163.08(2)(b), Florida Statutes (herein, "qualifying improvements"). The Bonds may be solely secured by the proceeds derived from special assessments in the form of non-ad valorem assessments imposed by the local governments, upon the voluntary agreement of the

record owners of the affected property as authorized by Section 163.08, Florida Statutes (2010) (the "Supplemental Act"). In order to pay the costs of qualifying improvements, the Supplemental Act expressly authorizes the imposition and collection of "non-ad valorem assessments" as defined in Section 197.3632(1)(d), Florida Statutes, which constitute a lien against the affected property, including homestead property, as permitted by Article X, Section 4 of the Florida Constitution.

EIGHTH. The Supplemental Act authorizes local governments (a) to finance qualifying improvements through the execution of financing agreements and the related imposition of non-ad valorem assessments, (b) to incur debt for purposes of providing such qualifying improvements, payable from revenues received from such non-ad valorem assessments or any other available revenue source authorized by law, (c) to enter into a partnership with one or more local governments for purposes of providing and financing qualifying improvements, and (d) to administer, or allow for the administration of, a qualifying improvement program by a for-profit entity or a not-for-profit entity. A copy of the Supplemental Act was received into evidence as Plaintiff's Exhibit "4".

NINTH. The Supplemental Act is additional and supplemental to county and municipal home rule authority and is not in derogation of such authority or a limitation upon such authority.

TENTH. The Supplemental Act includes the following legislative determinations:

(A) In chapter 2008-227, Laws of Florida, the Legislature amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources.

(B) That act also declared it the public policy of the state to play a leading role in developing and instituting energy management programs that promote energy conservation, energy security and the reduction of greenhouse gases.

(C) In chapter 2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas reduction comprehensive planning requirements for local governments.

(D) The Legislature finds that all energy-consuming improved properties that are not using energy conservation strategies contribute to the burden affecting all improved property resulting from fossil fuel energy production.

(E) Improved property that has been retrofitted with energy-related qualifying improvements receives the special benefit of alleviating the property's burden from energy consumption.

(F) All improved properties not protected from wind damage by wind resistance qualifying improvements contribute to the burden affecting all improved property resulting from potential wind damage. Improved property that has been retrofitted with

wind resistance qualifying improvements receives the special benefit of reducing the property's burden from potential wind damage.

(G) The installation and operation of qualifying improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the state's energy and hurricane mitigation policies.

(H) In order to make qualifying improvements more affordable and assist property owners who wish to undertake such improvements, the Legislature finds that there is a compelling state interest in enabling property owners to voluntarily finance such improvements with local government assistance.

ELEVENTH. The Legislature determined that the actions authorized under the Supplemental Act, including, but not limited to, the financing of qualifying improvements through the execution of financing agreements between property owners and local governments and the resulting imposition of non-ad valorem assessments are reasonable and necessary to serve and achieve a compelling state interest and are necessary for the prosperity and welfare of the state and its property owners and inhabitants.

TWELFTH. The non-ad valorem assessments imposed pursuant to the Supplemental Act (a) are only imposed with the written consent of the affected property owners, (b) are evidenced by a financing agreement as provided for in the Supplemental Act which comports with and evidences the provision of due process to every affected property owner, (c) constitutes a valid and enforceable lien permitted by Article X, Section

4 of the Florida Constitution, of equal dignity to taxes and other non-ad valorem assessments and is paramount to all other titles, liens or mortgages not otherwise on parity with the lien for taxes and non-ad valorem assessments, which lien runs with, touches and concerns the affected property, and (d) are used to pay the costs of qualifying improvements necessary to achieve the public purposes articulated by the Supplemental Act. As such, the non-ad valorem assessments imposed pursuant to the Supplemental Act are indistinguishable from and fully equivalent to all other non-ad valorem assessments providing for the payment of costs of capital projects, improvements, and/or essential services (e.g., infrastructure and services related to roads, stormwater, water, sewer, garbage removal/disposal, etc.) which benefit property or relieve a burden created by property in furtherance of a public purpose.

THIRTEENTH. Florida law provides that the amount of any given non-ad valorem assessment may not exceed the benefit conferred on the land, nor may it exceed the cost for the improvement and necessary incidental expenses. Non-ad valorem assessments imposed pursuant to the Supplemental Act are no different than any other non-ad valorem assessment imposed by a local government and therefore may not exceed the cost of the improvement and necessary incidental expenses.

FOURTEENTH. Non-ad valorem assessments imposed pursuant to the Supplemental Act, among other things, meet and comply with the well-settled case law

requirements of a special benefit and fair apportionment required for a valid special or non-ad valorem assessment.

FIFTEENTH. Any non-ad valorem assessments levied and imposed against affected real property must be collected pursuant to the uniform collection method set forth in Section 197.3632, Florida Statutes, pursuant to which non-ad valorem assessments are collected annually over a period of years on the same bill as property taxes.

SIXTEENTH. Non-ad valorem assessments imposed pursuant to the Supplemental Act are not subject to discount for early payment. Avoiding discounts for early payment of non-ad valorem assessments actually lowers the costs of annual collection paid by the affected property owners.

SEVENTEENTH. The Supplemental Act expressly and carefully clarifies and distinguishes the relationship of (i) prior contractual obligations or covenants which allow or are associated with unilateral acceleration of payment of a mortgage note or lien or other unilateral modification, with (ii) the action of a property owner entering into a financing agreement pursuant to the Supplemental Act. The Supplemental Act lawfully recognizes the financing agreement required therein as the means (i) to evidence a non-ad valorem assessment and renders unenforceable any provision in any agreement between a mortgagee or other lienholder and a property owner which allows for the acceleration of payment of a mortgage, note, lien or other unilateral modification solely as a result of (ii) entering into a financing agreement pursuant to the Supplemental Act which thereby

establishes a non-ad valorem assessment. This provision of the Supplemental Act does not result in a contractual impairment of the mortgage or similar lien which differs from any other lawful non-ad valorem assessment as the value of the prior contract (e.g. mortgagee's interest) is not impaired by the financing agreement nor is the prior contract impaired by recognition of the priority of a lien for a subsequent non-ad valorem assessment.

EIGHTEENTH. Even if there is an impairment of contract as a result of the Supplemental Act, such impairment is not substantial nor does it constitute an intolerable impairment, and as such does not warrant overturning the Supplemental Act as there is an overriding necessity for the Supplemental Act. Pursuant to the Supplemental Act, any mortgage lien holder on a participating property shall be provided not less than 30 days prior notice of the property owners' intent to enter into a financing agreement together with the maximum principal amount of the non-ad valorem assessment and the maximum annual assessment amount. The Supplemental Act does not limit the authority of the mortgage holder or loan servicer to increase or require monthly escrow payments in an amount necessary to annually pay the qualifying improvement assessment. The Supplemental Act additionally requires as a condition precedent to the effectiveness of a non-ad valorem assessment, (i) a reasonable determination of a recent history of timely payment of taxes for at least three (3) years, (ii) the absence of any recent involuntary liens or property-based debt delinquencies for at least three (3) years, (iii) verification that the property owner is current on all mortgage debt on the property, (iv) that, without the

consent of the mortgage holder or loan servicer, the total amount of any non-ad valorem assessment for qualifying improvements not exceed twenty percent (20%) of the just value of the property, except that energy conservation and efficiency improvements and renewable energy improvements are not subject to the twenty percent (20%) of just value limit if such improvements are supported by an energy audit which demonstrates that annual energy savings from the improvements equal or exceed the annual repayment of the non-ad valorem assessment, and (v) that any work requiring a license under any applicable law to make the qualifying improvement be performed by a properly certified or licensed contractor. Finally, each financing agreement (or a memorandum thereof) must be recorded in the public records of the county where the property is located promptly after the execution thereof. The Supplemental Act (i) was enacted to deal with broad generalized economic or social problems, (ii) is based on historical principles of law in existence before any affected mortgage or other debt instrument was entered into and operates and will be administered in an area of intense governmental regulation and public scrutiny, and (iii) is, or provides for conditions which are tolerable in light of covenants contained in mortgage and other debt instruments which may otherwise allow for unilateral acceleration.

NINETEENTH. The qualifying improvements and all costs associated therewith funded with the proceeds of the non-ad valorem assessments evidenced by any financing agreement pursuant to the Supplemental Act must convey a special benefit to the real

property subject to the assessment and the cost of the service or improvement must be fairly and reasonably apportioned among such real property. The special benefit necessary to support the imposition of a non-ad valorem assessment may consist of the relief or mitigation of a burden created by the affected real property.

TWENTIETH. Qualifying improvements address the public purpose of reducing, mitigating or alleviating the affected properties' burdens relating to energy consumption resulting from use of fossil fuel energy and/or reduce burdens or demands of affected properties that might otherwise result or manifest from potential wind, storm or hurricane events or damage.

TWENTY-FIRST. The voluntary application for funding to finance a qualifying improvement and entry into a written financing agreement as required by and pursuant to the Supplemental Act provides direct, competent and substantial evidence that each affected property owner has determined and acknowledged that the cost of qualifying improvements is equal to or less than the benefits received or burdens relieved or mitigated as to any affected property and has been provided and received substantive and procedural due process in the imposition of the resulting non-ad valorem assessments.

TWENTY-SECOND. The unique and specific procedures required by the Supplemental Act provide written and publicly recorded evidence that no affected property owner will be deprived of due process in the imposition of the non-ad valorem assessments or subsequent constructive notice that the assessment has been imposed.

TWENTY-THIRD. The Master Bond Resolution authorizes Plaintiff's issuance of not exceeding $2,000,000,000 in aggregate principal amount at any one time outstanding of Florida PACE Funding Agency Revenue Bonds (Energy and Wind Resistance Improvement Finance Program), in various series, in order to provide funds with which to administer an energy and wind resistance improvement finance program and thereby advance the Plaintiff's mission to undertake, cause and/or perform all such acts as shall be necessary to provide a uniform and efficient local platform capable of securing economies of scale and implementation on a state-wide basis if and when embraced by individual local governments to facilitate the provision, funding and financing of qualifying improvements.

TWENTY-FOURTH. The Master Bond Resolution provides that the Bonds will be issued in such amounts, at such time or times, be designated as such series, be dated such date or dates, mature at such time or times, be subject to tender at such times and in such manner, contain such redemption provisions, bear interest at such rates not to exceed the maximum permitted by Florida law, including variable and fixed rates, and be payable on such dates as provided in the various trust indentures to be entered into and by and between the Plaintiff and one or more national banking associations or trust companies authorized to exercise trust services in Florida, to be determined by a resolution of the Plaintiff to be adopted prior to the issuance of the Bonds (the "Indentures").

TWENTY-FIFTH. The Charter Agreement approves the execution of Subscription Agreements by and between the Plaintiff and each of the local governments participating in

the energy and wind resistance improvement finance program (each a "Subscriber"). Subscription Agreements are a lawful means to provide for (a) the authority of the Plaintiff to act, provide its services, and conduct its affairs within the Subscriber's jurisdiction; (b) the Plaintiff to facilitate the voluntary acquisition, delivery, installation or any other manner of provision of qualifying improvements to record owners desiring such improvements who are willing to enter into financing agreements as provided for in the Supplemental Act and agree to impose non-ad valorem assessments which shall run with the land on their respective properties; (c) the Subscriber to levy, impose and collect non-ad valorem assessments pursuant to such financing agreements; (d) the issuance of bonds of the Plaintiff to fund and finance the qualifying improvements; (e) the proceeds of such non-ad valorem assessments to be timely and faithfully paid to the Plaintiff; (f) the withdrawal from, discontinuance of or termination of the Subscription Agreement by either party upon reasonable notice in a manner not detrimental to the holders of any bonds of the Plaintiff or inconsistent with any financing documents related to such bonds; (g) such disclosures, consents or waivers reasonably necessary to use or employ the services and activities of the Plaintiff; and (h) such other covenants or provisions deemed necessary and mutually agreed to by the parties to carry out the purpose and mission of the Plaintiff. A copy of the form of Subscription Agreement to be adopted by each participating local government is attached as Appendix A to the Master Bond Resolution and was received into evidence as Plaintiff's Exhibit "3".

TWENTY-SIXTH. The Subscription Agreements provide a lawful and enforceable means to evidence the express authority and concurrent transfer of all necessary powers to the Plaintiff, and the covenant to cooperate by the Subscriber, so that the Plaintiff may facilitate, administer, implement and assist in providing qualifying improvements, facilitate financing agreements and non-ad valorem assessments only on properties subjected to same by the record owners thereof, develop markets, structures and procedures to finance same, and to take any actions associated therewith or necessarily resulting there from, as contemplated by the Supplemental Act.

TWENTY-SEVENTH. Neither Plaintiff, nor any local government participating in the Plaintiff's program pursuant to a Subscription Agreement, is prohibited from enacting, implementing and operating a non-ad valorem assessment program to finance qualifying improvements under the Supplemental Act by any provision of any agreement between the Plaintiff or any Subscriber and a public or private power or energy provider or other utility provider, since any provision of such agreements are rendered unenforceable if used to limit or prohibit any local government from exercising its authority to operate a program under the Supplemental Act.

TWENTY-EIGHTH. The Master Bond Resolution provides that the principal of, premium, if any, and interest on the Bonds shall be payable solely from the proceeds of non-ad valorem assessments imposed by local governments pursuant to financing agreements with affected property owners as provided for in the Supplemental Act, and

the funds and accounts described in and as pledged and as limited under the Indentures and under the Subscription Agreements to be executed and delivered by the local governments (the "Pledged Revenues").

TWENTY-NINTH. The Pledged Revenues pledged to one series of Bonds may be different than the Pledged Revenues pledged to other series of Bonds.

THIRTIETH. Bonds issued pursuant to the Master Bond Resolution to redeem and/or refund any bonds or other indebtedness of the Plaintiff shall be deemed to be a continuation of the debt refunded or redeemed and shall not be considered to be an issuance of an additional principal amount of debt chargeable against the amount originally validated in this proceeding and authorized to be issued.

THIRTY-FIRST. The Bonds and any series thereof may be issued such that the interest thereon shall not be excluded from gross income of the holders thereof for purposes of federal income taxation, or may be issued such that the interest thereon shall be excluded from gross income of the holders thereof for purposes of federal income taxation.

THIRTY-SECOND. The Bonds and any series thereof may be issued such that the Bonds are or are not further secured by one or more bond insurance policies, letters of credit, surety bonds or other form of credit support.

THIRTY-THIRD. The Master Bond Resolution requires the use of financing agreements in establishing any non-ad valorem assessment in the manner provided for in

the Supplemental Act for each local government participating in the energy and wind resistance improvement finance program.

THIRTY-FOURTH. The Master Bond Resolution provides that the Bonds and the obligations and covenants of the Plaintiff under the Indentures and the Subscription Agreements and other documents (collectively, the "Program Documents") shall not be or constitute a debt, liability, or general obligation of the Plaintiff, the Incorporators, the State of Florida, or any political subdivision or municipality thereof (excluding the local governments to the extent of their respective obligations under their respective Subscription Agreements), nor a pledge of the full faith and credit or any taxing power of the Plaintiff, the Incorporators, the State or any political subdivision or municipality thereof, but shall constitute special obligations payable solely from the non-ad valorem assessments as evidenced by the financing agreements and secured under the Indenture, in the manner provided therein and in any Subscription Agreements. The holders of the Bonds shall not have the right to require or compel any exercise of the taxing power of the Plaintiff, the Incorporators, the local governments entering into any financing agreement with an affected property owner, the State of Florida or of any political subdivision thereof to pay the principal of, premium, if any, or interest on the Bonds or to make any other payments provided for under the Indentures, any Subscription Agreements or the Program Documents. The issuance of the Bonds shall not directly, indirectly, or contingently obligate the Plaintiff, the Incorporators, the State of Florida or any political subdivision or

municipality thereof (excluding the local governments to the extent otherwise provided in their respective Subscription Agreements) to levy or to pledge any form of taxation or assessments whatsoever therefore.

THIRTY-FIFTH. Plaintiff and the general purpose local governments incorporating or acting as members of the Plaintiff are and shall be subject to Sections 768.28 and 163.01(9)(c), Florida Statutes, and any other provisions of Florida law governing sovereign immunity. Pursuant to Section 163.01(5)(o), Florida Statutes, such local governments may not be held jointly liable for the torts of the officers or employees of the Plaintiff, or any other tort attributable to the Plaintiff or another member of the Plaintiff, and the Plaintiff alone shall be liable for any torts attributable to it or for torts of its officers, employees or agents, and then only to the extent of the waiver of sovereign immunity or limitation of liability as specified in Section 768.28, Florida Statutes.

THIRTY-SIXTH. Plaintiff is a legal entity separate and distinct from the Incorporators, and neither of the Incorporators, nor any subsequent local government member of the Plaintiff, nor any subsequently participating or subscribing local government shall in any manner be obligated to pay any debts, obligations or liabilities arising as a result of any actions of the Plaintiff, its Board of Directors or any other agents, employees, officers or officials of the Plaintiff, except to the extent otherwise mutually and expressly agreed upon, and neither the Plaintiff, its Board of Directors or any other agents, employees, officers or officials of the Plaintiff have any authority or power to otherwise

obligate either of the Incorporators, nor any subsequent member of the Plaintiff, nor any subsequently participating or subscribing local government in any manner.

THIRTY-SEVENTH. All requirements of the Constitution and laws of the State of Florida pertaining to the issuance of the Bonds and the adoption of the proceedings of the Plaintiff have been complied with.

NOW, THEREFORE, IT IS ORDERED AND ADJUDGED that the Bonds, the Charter Agreement, the Supplemental Act, the matters set forth in each of the preceding numbered paragraphs including, but not limited to, the proceedings related thereto, the Master Bond Resolution and the adoption thereof, the revenues pledged or covenanted for the repayment of the Bonds, the validity of the financing agreements entered into and the non-ad valorem assessments imposed pursuant to the Supplemental Act which shall evidence and comprise all or in substantial part the revenues pledged, are hereby validated and confirmed, are for proper, legal and paramount public purposes and are fully authorized by law, and that this Final Judgment validates and confirms the authority of the Plaintiff to issue the Bonds and the legality of all proceedings in connection therewith.

There shall be stamped or written on the back of each of the Bonds a statement in substantially the following form:

> "This Bond was validated by judgment of the Circuit Court for Leon County, Florida rendered on _____, 2011.
>
> _____
> [Officer, Florida PACE Funding Agency]"

provided that such statement or certificate shall not be affixed within thirty (30) days after the date of this judgment and unless no appeal be filed in this cause.

DONE AND ORDERED at the Leon County Courthouse located in Tallahassee, Florida, this 25 day of August 2011.

Circuit Court Judge

Copies to:

Robert C. Reid, Bryant Miller Olive, Counsel for Plaintiff
Mark G. Lawson, Bryant Miller Olive, Counsel for Plaintiff
Christopher B. Roe, Bryant Miller Olive, Counsel for Plaintiff
Jason M. Breth, Bryant Miller Olive, Counsel for Plaintiff
Georgia Anne Cappleman, Assistant State Attorney, Second Judicial Circuit
Ben Fox, Assistant State Attorney, Seventh Judicial Circuit
Damien Kreabel, Assistant State Attorney, Sixth Judicial Circuit
Steve Foster, Assistant State Attorney, Ninth Judicial Circuit

EXHIBIT D

University of California Energy Institute, *Doing Well by Doing Good? Green Office Buildings*, by Piet Eichholtz, Nils Kok and John M. Quigly, December 2010

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Doing Well by Doing Good? Green Office Buildings

By Piet Eichholtz, Nils Kok, and John M. Quigley*

The behavior of the building and real estate sectors is quite important in matters of environmental sustainability. It is reported, for example, that buildings account for approximately 40 percent of the consumption of raw materials and energy. In addition, 55 percent of the wood that is not used for fuel is consumed in construction. Overall, buildings and their associated construction activity account for at least 30 percent of world greenhouse gas emissions (Royal Institution of Chartered Surveyors, RICS 2005). The impact of energy costs directly affects tenants and building owners. Energy represents 30 percent of operating expenses in a typical office building; this is the single largest and most manageable operating expense in the provision of office space.

Thus the design and operation of real estate can play an important role in energy conservation in advanced societies. Awareness of this fact is growing. The increasing emphasis on "green rating" systems for buildings—initiated by both government and industry—gives witness to this development. In general, these ratings assess the energy footprint of buildings, and they may provide owners and occupants with a solid yardstick for measuring the energy efficiency and sustainability of properties. However, the use of these ratings has so far been limited, and the global diffusion of rating systems is relatively slow. Moreover, both real estate developers and institutional investors are understandably uncertain about how far to go in implementing environmental investments, since the economic rationale for the development of sustainable buildings is based almost entirely on anecdotal evidence.

This paper provides the first systematic analysis of the impact of environmentally sustainable building practices upon economic outcomes as measured in the marketplace. We concentrate on commercial property, and we investigate the relationship between investments in energy efficiency in design and construction and the rents, the effective rents (that is, rents adjusted for building occupancy levels), and the selling prices commanded by these properties. We analyze a large sample of buildings, some of which have been certified as more energy efficient by independent and impartial rating services.

We assemble a national sample of US office buildings which have been evaluated for energy efficiency by one of two leading agencies. For each building, we identify a control sample of nearby office buildings. For some 10,000 subject and control buildings, we relate contract rents, effective rents and selling prices to a set of objective hedonic characteristics of buildings, holding constant the locational characteristics of properties. We find that buildings with a "green rating" command rental rates that are roughly 3 percent higher per square foot than otherwise identical buildings—controlling for the quality and the specific location of office buildings. Premiums in effective rents are even higher—above 7 percent. Selling prices of green buildings are higher by about 16 percent.

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Beyond the average price or rental premium, our methodology also permits us to estimate the increment for each "green building" relative to the control buildings in its immediate geographic neighborhood. We find, for example, that the relative premium for green buildings is higher, ceteris paribus, in places where the economic premium for location is lower. That is, the percent increase in rent or value for a green building is systematically greater in smaller or lower-cost regions or in less expensive parts of metropolitan areas.

For a subsample of the buildings which have been certified as energy efficient by the Energy Star program, we obtained the data on energy usage reported to the Environmental Protection Agency as a part of the certification process. Within this population of certified green buildings, we find that variations in market value are systematically related to the energy efficiency of buildings. This is strong evidence that the increment to market value attributable to its certification as "green" reflects more than an intangible labeling effect.

Section I below provides a brief review of the emerging literature on corporate social responsibility and its relationship to environmentally sustainable buildings. In Section II we discuss the sources of ratings for the environmental aspects of buildings, and we describe the data used in our analysis, a unique body of micro data on the economic and hedonic characteristics of office buildings. We also discuss the energy usage data made available to us by the US Environmental Protection Agency. Section III presents our methodology and empirical results. Section IV is a brief conclusion.

I. Social Responsibility

"Corporate social responsibility" (Sandra A. Waddock and Samuel B. Graves 1997), or "CSR," has become a normative standard that describes firms' choices about inputs (e.g., the source of raw materials), internal processes (e.g., the treatment of employees), and publicity (e.g., community relations). Evaluations of the social responsibility of private firms have become an investment criterion for some investors, and it is estimated that $2.7 trillion is currently allocated to "socially screened" portfolios in the United States alone (Social Investment Forum 2007). However, the economic rationale for investing in companies or investment funds that rank high in corporate social performance is a matter of debate, and there is no consensus about the financial performance of these investments (Joshua D. Margolis and James P. Walsh 2003).

Companies with well-defined and aggressive CSR policies might be able to outperform others for several reasons: improved corporate reputation (Daniel B. Turban and Daniel W. Greening 1997), less intrusion from activists and governmental organizations (David P. Baron 2001, Thomas P. Lyon, and John W. Maxwell forthcoming), reduced threat of regulation (Maxwell, Lyon, and Steven C. Hackett 2000), and improved profitability through lower input costs and higher employee productivity. The latter two represent the most tangible elements of corporate social responsibility.

In the real estate sector, these issues of eco-efficiency are confounded with straightforward capital budgeting decisions involving choices between the levels and types of initial investment and consequent operating inputs chosen to maximize investor returns. In this context, the investment in green buildings could lead to economic benefits in several distinct ways.

First, investments in energy efficiency at the time of construction or renovation may: save current resources expended on energy, water, and waste disposal; decrease other operating costs; insure against future energy price increases; and simultaneously decrease greenhouse gas emissions. The financial benefits of energy savings and waste reduction are measurable, but existing empirical studies focus on environmental consequences rather than financial performance. For real estate, the evidence on energy savings in green buildings is typically based upon engineering studies of energy usage. There seems to be a consensus that a variety of capital expenditures improving energy efficiency in property are cost effective at reasonable interest rates, given current and projected energy costs.

Second, an improved indoor environmental quality in green buildings might result in higher employee productivity. But while energy and waste savings can be measured fairly precisely, the relation between employee productivity and building design or operation is far more complicated. The financial impact of healthier and more comfortable green buildings is hard to assess, in part because the cost of poor indoor environmental quality (for example, lower productivity and higher absenteeism) may simply be hidden. However, there is popular discussion of the putative health and productivity costs that are imposed by poor indoor environmental quality in commercial buildings.[1] In recognition of these assertions, largely undocumented, tenants may be willing to pay a higher rent for buildings in which indoor environmental quality is better.

Third, locating corporate activities in a green building may affect the corporate image of tenants. Leasing space in a green building may send a concrete signal of the social awareness and superior social responsibility of the occupants. This may be important for some firms, and it may be a determinant of corporate reputation (Charles J. Fombrun and Mark Shanley 1990). Favorable reputations may enable firms to charge premium prices (Benjamin Klein and Keith B. Leffler 1981), to attract a better work force (Turban and Greening 1997), and to attract investors (Paul R. Milgrom and John Roberts 1986). As a result, tenants may be willing to pay higher rents for green buildings.

Fourth, if tenants would prefer sustainable buildings, then sustainable buildings could have longer economic lives than conventional buildings. This could also imply a lower volatility in market value—due to less environmental risk and better marketability—leading to reduced risk premiums and higher valuations of the properties. Mark Orlitzky and John D. Benjamin (2001) address the relation between corporate social performance and risk; they argue that the better a firm's social reputation, the lower its total market risk. If this relationship holds for the real estate sector, building green may result in a lower cost of capital and a higher building valuation. So, even if green buildings did not command higher spot rents, they could still be more valuable.

Economists are quick to point out that many of these advantages could be obtained if energy inputs were appropriately priced (to reflect their social and environmental costs). Appropriate investments in energy efficiency would minimize life-cycle costs discounted at market rates, maximize developer returns, and correctly economize on energy costs (John M. Quigley 1991). But to the extent that productivity, corporate image, and intangible or hard-to-measure returns are important, simple adjustments of input prices are just that—too simple.

If the economic benefits of building green for commercial property are indeed reflected in tenants' willingness to pay premiums on net rent for green spaces or in lower risk premiums for green buildings, this would enable investors to offset the higher initial investment required for sustainable buildings, or even to command higher risk-adjusted returns. However, for real estate investors, hard evidence on the financial performance of green buildings is limited and consists mainly of industry-initiated case studies.[2] To persuade property owners, developers and investors in the global marketplace of the benefits of "eco-investment," the payoff from investment in green buildings needs to be identified in that same environment.

II. Data on Commercial Buildings

In the United States, there are two major programs that encourage the development of energy-efficient and sustainable buildings through systems of ratings to designate and publicize exemplary

[1] US EPA Indoor Air Quality. 2009. See http://www.epa.gov/iaq/.for more background information.

[2] An example is the 2003 *The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force.* http://www.ciwmb.ca.gov/Greenbuilding/Design/CostBenefit/Report.pdf. For a sample of 33 California buildings with green ratings, it was concluded that the financial benefits of green design were ten times as large as the incremental outlays to finance those green investments. However, the sources of the financial benefits identified in this case study are diverse, hard to quantify, and they were not verified by market transactions.

buildings. The Energy Star program is jointly sponsored by two Federal agencies, the US Environmental Protection Agency, and the US Department of Energy. Energy Star began in 1992 as a voluntary labeling program designed to identify and promote energy-efficient products in order to reduce greenhouse gas emissions. Energy Star labels were first applied to computers and computer equipment and were later extended to office equipment, to residential heating and cooling equipment, and to major appliances. The Energy Star label was extended to new homes in 1993 and has been promoted as an efficient way for consumers to identify builders as well as buildings constructed using energy-efficient methods. The Energy Star label is marketed as an indication of lower ownership costs, better energy performance, and higher home resale values. The label is also marketed as an indication of better environmental protection, and the Energy Star Web site for new homes stresses that "your home can be a greater source of pollution than your car." The Energy Star label was extended to commercial buildings in 1995, and the labeling program for these buildings began in 1999.

Nonresidential buildings can receive an Energy Star certification if the source energy use of the building (that is, the total of all energy used in the building), as certified by a professional engineer, achieves certain specified benchmark levels. The benchmark is chosen so that the label is awarded to the top quarter of all comparable buildings, ranked in terms of source energy efficiency. The Energy Star label is marketed as a commitment to conservation and environmental stewardship. But it is also touted as a vehicle for reducing building costs and for demonstrating superior management skill. Indeed, the Energy Star Web site draws attention to the relationship between energy conservation in buildings and other indicia of good "corporate governance."

As of June 2009, 7,338 buildings in the United States had been awarded the Energy Star designation, including 2,943 office buildings.

The US Green Building Council (USGBC), a private nonprofit organization, has developed the LEED ("Leadership in Energy and Environmental Design") green building rating system to encourage the "adoption of sustainable green building and development practices." Since adoption in 1999, separate standards have been applied to new buildings and to existing structures. The requirements for certification of LEED buildings are substantially more complex than those for the award of an Energy Star rating, and additional points in the certification process are awarded for such factors as "site selection," "brownfield redevelopment," and the availability of "bicycle storage and changing rooms," as well as energy performance.

It is claimed that LEED-certified buildings have lower operating costs and increased asset values and provide healthier and safer environments for occupants. It is also noted that the award of a LEED designation "demonstrate[s] an owner's commitment to environmental stewardship and social responsibility."

As of June 2009, there were 2,706 buildings certified by the LEED Program of the USGBC, including 1,151 office buildings.

Energy-Star-rated buildings and LEED-rated buildings are identified by street address on the Web sites of Energy Star and the USGBC respectively. We matched the addresses of the rated buildings in these two programs as of September 2007 to the office buildings identified in the archives maintained by the CoStar Group. The CoStar service and the data files maintained by CoStar are advertised as "the most complete source of commercial real estate information in the United States."[3] Our match

[3] The CoStar Group maintains an extensive micro database of approximately 2.4 million US commercial properties, their locations, and hedonic characteristics, as well as the current tenancy and rental terms for the buildings. Of these 2.4 million commercial buildings, approximately 17 percent are offices, 22 percent are industrial properties, 34 percent is retail, 11 percent is land, and 12 percent is multifamily. A separate file is maintained of the recent sales of commercial buildings.

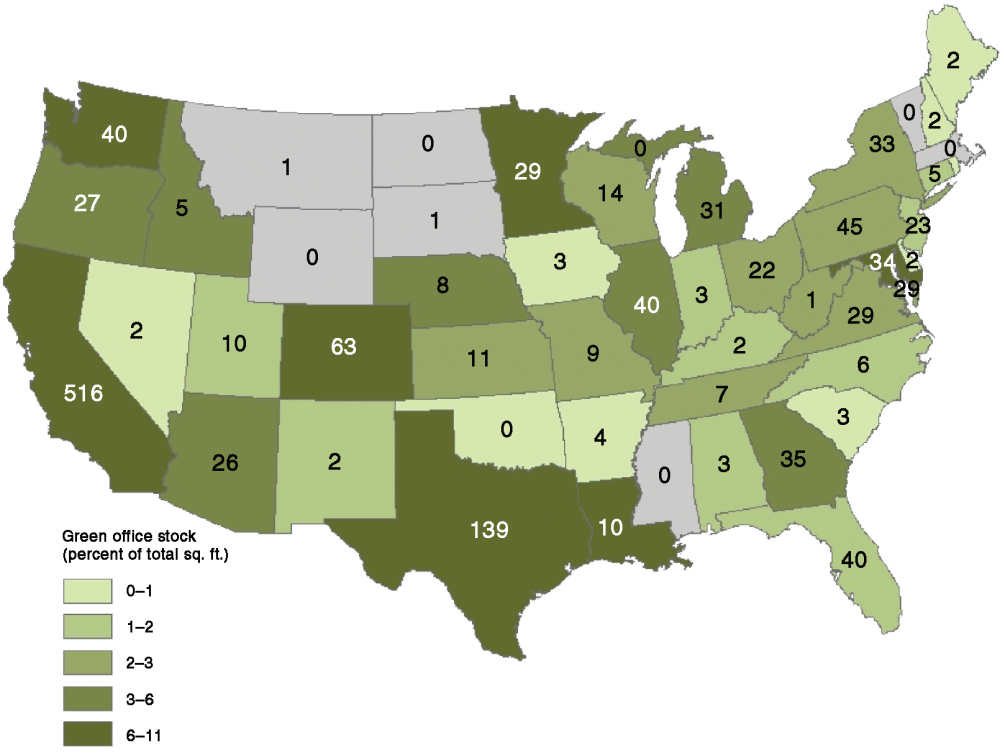

FIGURE 1. DISTRIBUTION OF GREEN OFFICE BUILDINGS BY STATE, 2007
(*percent of the stock of office space*)

Note: The number of green office buildings in each state is also reported.

Source: CoStar and authors' calculations

yielded 1,360 green office buildings which could be identified in CoStar,[4] of which 286 were certified by LEED, 1,045 were certified by Energy Star, and 29 were certified by both LEED and Energy Star.

Figure 1 provides a geographic summary of our match between the Energy Star-certified commercial office buildings, the LEED-certified buildings, and the universe of commercial buildings identified in CoStar. The figure reports the number of certified commercial office buildings in each state, as well as an estimate of the fraction of office space in each state that has been rated for environmental sustainability. Calculations based on information from the CoStar database show that about 3 percent of US office building space is green labeled.[5] As the map indicates, in some states—notably Texas, Washington, and Minnesota—more than 5 percent of office buildings are

[4] In the September 2007 version of the CoStar database, green-rated buildings are separately identified. However, in matching the Energy Star and LEED-certified buildings by street address, we discovered that about a quarter of the buildings certified by Energy Star and LEED had not been recorded in the CoStar database. These missing observations are mostly owner-occupied green offices, implying that no rental data are available. Since property investors cannot invest in these buildings, we do not expect this to have an important effect on the results.

[5] Ratios based upon the CoStar data probably overstate the fraction of green office space in the US inventory, since CoStar's coverage of smaller and older office buildings is less complete. The ratio of rated space in the United States is based on the certified office space as a fraction of total office space per state, as covered by CoStar. The ratio of the absolute number of office buildings with a green rating is smaller than the ratio of total office space, as green buildings are typically larger than the otherwise comparable nongreen office building.

rated. The incidence of green office space is almost 9 percent in California—122 million square feet of office space are labeled. In a large number of states, however, only a small fraction of office space is certified by Energy Star or the USGBC. Apart from California, states with extreme temperatures are apparently more likely to have rated office buildings.

Of the 1,360 rated buildings identified in the CoStar database, current information about building characteristics and monthly rents was available for 694 buildings. In addition, 199 of these buildings were sold between 2004 and 2007.[6] To investigate the effect of energy efficiency on the rents and values of commercial buildings, we matched each of the rated buildings in this sample to nearby commercial buildings in the same market. Based upon the latitude and longitude of each rated building, we used GIS techniques to identify all other office buildings in the CoStar database within a radius of one quarter mile. In this way, we created 893 (i.e., 694 plus 199) clusters of nearby office buildings. Each small cluster—0.2 square miles—contains one rated building and at least one nonrated nearby building. On average, each cluster contains about 12 buildings. There are 8,105 commercial office buildings in the sample of green buildings and control buildings with rental data, and there are 1,813 buildings in the sample of buildings which have been sold.

III. Empirical Analysis

A. *The Premium for Labeled Buildings*

To investigate how the certification of energy efficiency influences the rent and value of commercial office buildings, we start with the standard valuation framework for commercial real estate. The sample of energy-rated office buildings and the control sample consisting of one-or-more nearby nonrated office buildings are used to estimate a semilog equation relating office rents (or selling prices) per square foot to the hedonic characteristics of the buildings (e.g., age, building quality, amenities provided, etc.) and the location of each building:

$$\log R_{in} = \alpha + \beta_i \mathbf{X}_i + \sum_{n=1}^{N} \gamma_n c_n + \delta g_i + \varepsilon^{*}_{in} \tag{1a}$$

$$\log R_{in} = \alpha + \beta_i \mathbf{X}_i + \sum_{n=1}^{N} \gamma_n c_n + \sum_{n=1}^{N} \delta_n [c_n g_i] + \varepsilon^{**}_{in}. \tag{1b}$$

In the formulation represented by equation (1a), the dependent variable is the logarithm of the rent per square foot R_{in} in commercial office building i in cluster n. In other results presented, the dependent variable is the logarithm of effective rent per square foot (that is, the rent per square foot multiplied by the occupancy rate) or the selling price per square foot. $\mathbf{X}_i$ is a vector of the hedonic characteristics of building i. To control for regional differences in demand for office space, $\mathbf{X}_i$ also includes the percentage increase in employment in the service sector for the Core Based Statistical Area (CBSA) containing a cluster of a green building and its nearby controls.[7] To control further for locational effects, c_n is a dummy variable with a value of 1 if building i is located in cluster n and zero otherwise.[8] g_i is a dummy variable with a value of 1 if building i is

[6] We choose this interval, 2004–2007, in part because the formula for rating office buildings was unchanged throughout the period.

[7] For the rental sample, we use the employment growth in 2006; for the transaction sample, we use the employment growth in the year before the transaction date. These data are available from the Bureau of Labor Statistics (www.bls.gov).

[8] In this way, the specification recognizes the old adage defining the three most important determinants of property valuation: "location, location, location."

rated by Energy Star or USGBC and zero otherwise. α, β_i, γ_n, and δ are estimated coefficients, and ε_{in} is an error term. For the sample of rental properties in expression (1a), there are dummy variables for 694 separate locations which may affect office rents, one for each of the N distinct 0.2-square-mile clusters. The increment to rent associated with a rated building is $\exp[\delta]$. For the sample of sold buildings, there are 199 location coefficients, one for each cluster, as well as dummy variables for the year of sale.[9]

In equation (1b), the locational measure is further generalized. In this formulation, the effect of a green rating on commercial rents or selling prices may vary separately for green buildings in each of the 694 clusters in the rental sample and for green buildings in each of the 199 clusters in the sample of sold buildings. The increment to rent or market value for the green building in cluster n, relative to the rents of the other buildings in cluster n, is $\exp[\delta_n]$.

Table 1 presents the basic results for the rental sample, relating the logarithm of rent per square foot in commercial office buildings to a set of hedonic and other characteristics of the buildings. Results are presented for ordinary least squares regression models corrected for heteroskedasticity (Halbert White 1980). Column (1) reports a basic model relating rent to building quality, measured by class designation, size, and occupancy rate. The regression, based upon 8,105 observations on buildings[10] explains some 72 percent of log rent. When rents are quoted gross, they are about 5 percent higher than when they are quoted net of utilities. Higher quality buildings, as measured by building class, command a substantial premium. Rent in a class A building is about 23 percent higher than in a class C building and about 13 percent higher than in a class B building. Rent is significantly higher in larger buildings, as measured by square footage, but the magnitude is quite small, about 1 percent for an additional 100,000 square feet. Employment growth in the service sector has a strong effect on rents; a one percent increase in employment in the service sector leads to an increase of 0.6 percent in rent. The coefficients for the 694 dummy variables for location are highly significant, with an F-ratio of 23.49. Importantly, holding other factors constant, the estimated rent premium for a green building is about 3.5 percent.

In column (2), the green certification is distinguished by its Energy Star or LEED rating. The estimated coefficient for the LEED rating indicates a premium of 5.2 percent in commercial rents, but this is insignificantly different from zero. The Energy Star rating is associated with rents higher by 3.3 percent. This difference is highly significant.

In column (3), a set of variables measuring building age in four categories is added to the model. The coefficients of the other variables are quite stable. The results indicate that there is a substantial premium associated with newer buildings. Ceteris paribus, rents in a commercial office building less than ten years old are 12 percent higher than those in a building more than 40 years old.

Column (4) adjusts for differences in the number of stories and for the presence of on-site amenities. There is evidence that rents in very tall buildings, greater than 20 stories, are slightly lower. On-site amenities are associated with higher office rents.

[9] Our formulation thus generalizes the treatment of spatial variation in the real estate asset pricing literature where spatial variation is commonly analyzed in one of three ways: first, by including location dummies for submarkets (John L. Glascock, Shirin Jahanian, and Clemon F. Sirmans 1990; William C. Wheaton and Raymond Torto 1994); second, by studying a specific MSA or small region to isolate the influence of spatial variation (Kenneth T. Rosen 1984; Brian R. Webb and Jeffrey D. Fisher 1996; Åke Gunnelin and Bo Söderberg 2003); or else by using Geographic Information System methods to specify the distance of a property to specific locations, for example the CBD, airport, or railway station (Rena Sivitanidou 1995; Christopher R. Bollinger, Keith R. Ihlanfeldt, and David. R. Bowes 1998; V. Attila Öven and Dilek Pekdemir 2006). Our analysis generalizes these methods by treating each of the small geographic clusters as distinct.

[10] That is, 694 rated buildings and 7,411 control buildings, each located within 1,300 feet of a rated building.

TABLE 1—REGRESSION RESULTS, COMMERCIAL OFFICE RENTS AND GREEN RATINGS
(*dependent variable: logarithm of rent in dollars per square foot*)

	(1)	(2)	(3)	(4)	(5)
Green rating (1 = yes)	0.035		0.033	0.028	
	[0.009]***		[0.009]***	[0.009]***	
Energy Star (1 = yes)		0.033			
		[0.009]***			
LEED (1 = yes)		0.052			
		[0.036]			
Building size (millions of sq. ft.)	0.113	0.113	0.102	0.111	0.111
	[0.019]***	[0.019]***	[0.019]***	[0.021]***	[0.023]***
Fraction occupied	0.020	0.020	0.020	0.011	0.004
	[0.016]	[0.016]	[0.016]	[0.016]	[0.017]
Building class:					
Class A (1 = yes)	0.231	0.231	0.192	0.173	0.173
	[0.012]***	[0.012]***	[0.014]***	[0.015]***	[0.017]***
Class B (1 = yes)	0.101	0.101	0.092	0.083	0.082
	[0.011]***	[0.011]***	[0.011]***	[0.011]***	[0.012]***
Net contract (1 = yes)	−0.047	−0.047	−0.050	−0.051	−0.057
	[0.013]***	[0.013]***	[0.013]***	[0.013]***	[0.014]***
Employment growth (fraction)	0.608	0.608	0.613	0.609	0.874
	[0.171]***	[0.171]***	[0.187]***	[0.189]***	[0.054]***
Age:					
< 10 years			0.118	0.131	0.132
			[0.016]***	[0.017]***	[0.019]***
10–20 years			0.079	0.085	0.083
			[0.014]***	[0.014]***	[0.015]***
20–30 years			0.047	0.049	0.049
			[0.013]***	[0.013]***	[0.014]***
30–40 years			0.043	0.044	0.044
			[0.011]***	[0.011]***	[0.012]***
Renovated (1 = yes)			−0.008	−0.008	−0.010
			[0.009]	[0.009]	[0.010]
Stories:					
Intermediate (1 = yes)				0.009	0.008
				[0.009]	[0.010]
High (1 = yes)				−0.029	−0.032
				[0.014]**	[0.016]**
Amenities (1 = yes)				0.047	0.054
				[0.007]***	[0.008]***
Constant	2.741	2.742	2.718	2.725	2.564
	[0.113]***	[0.114]***	[0.126]***	[0.127]***	[0.022]***
Sample size	8,105	8,105	8,105	8,105	8,105
R^2	0.72	0.72	0.72	0.72	0.74
Adjusted R^2	0.69	0.69	0.69	0.69	0.68

Notes: Each regression also includes 694 dummy variables, one for each locational cluster. Regression (5) also includes an additional 694 dummy variables, one for each green building in the sample. Standard errors are in brackets.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Importantly, when the specification of the hedonic variables is changed in various ways, the magnitude and the statistical significance of the green rating is unchanged. Ceteris paribus, the rent in a green building is significantly higher by 2.8 to 3.5 percent than in an unrated building.

Column (5) presents the results from estimation of equation (1b). In this formulation, the specification includes 1,388 dummy variables (not reported in the table)—one for each of the 694 clusters, and one for the specific green building identified in each cluster. When the model is expanded in this way, the coefficients of the other variables are unchanged, and the explained variance is slightly larger. Of course, in this more general specification, the rent premium for a green building varies in magnitude in each separate cluster. In Section IVB, we provide further analysis of the increments estimated for individual green buildings.

Table 2 presents the results when the dependent variable is measured by the logarithm of effective rent. When endogenous rent-setting policies are taken into account,[11] the results suggest that the effect of a green rating is even larger. In the simplest model, column (1), the statistical results suggest that a green rating is associated with a 10 percent increase in effective rent. In the regression reported in column (2), the dummy variable representing a LEED-rated building indicates a premium of 9 percent, and the t-ratio (1.8) approaches significance at conventional levels ($p = 0.07$). When the other hedonic characteristics and amenities of buildings are accounted for in column (4)—as far as possible—the results still indicate an effective premium of more than 7 percent for rated buildings. Taken together, the results reported in Tables 1 and 2 suggest that the occupancy rate of green buildings is about 11 percent higher than in otherwise comparable nongreen buildings.

Table 3 presents analogous results based upon the sample of 199 green office buildings sold in the 2004–2007 period and the control sample of 1,614 nongreen buildings sold within a quarter mile of those green buildings. These models explain a smaller fraction of the variation in the dependent variable, the logarithm of selling price per square foot, but the qualitative results are similar. For each of the specifications reported, the variable reflecting certification of a green building is highly significant. The transaction premiums for green buildings are, ceteris paribus, 15.8 to 16.8 percent higher than for nonrated buildings. When the certification is reported separately for the Energy Star and the LEED systems, there is no evidence that the latter certification is associated with higher selling prices. There is some evidence that selling prices per square foot are higher when buildings are larger, and when they are of higher quality (as measured by class rating). It appears that buildings with fewer stories sell for higher prices per square foot. Buildings sold in 2004 were lower in price by 17–20 percent compared to buildings sold in 2007.

The statistical results are broadly consistent across the models of rent and value determination. For example, the average effective rent for the control buildings in the rental sample of office buildings is $23.51 per square foot. At the average size of these buildings and from Table 2, the estimated annual rent increment for a green building is approximately $329,000. At prevailing capitalization rates of 6 percent, the incremental value of a green building is estimated to be about $5.5 million more than the value of a comparable unrated building nearby. The average selling price for the control buildings in the sample of buildings sold in the 2004–2007 period is $34.73 million. From Table 3, ceteris paribus, the incremental value of a green building is estimated to be about $5.7 million more than the value of a comparable unrated building nearby.

The results reported in Tables 1, 2, and 3 are robust to other variations in the hedonic characteristics included on the right-hand side in the vector **X**. They are not robust to the exclusion of the dummy variables identifying the neighborhoods in which the sample and control properties are located. However, the average quality of the green buildings is somewhat higher than the quality of the nongreen buildings in the clustered samples. Green buildings are slightly taller, and

[11] We may expect property owners to adopt differing asking rent strategies. Ceteris paribus, landlords who charge higher rents will experience higher vacancy rates.

TABLE 2—REGRESSION RESULTS, COMMERCIAL OFFICE RENTS AND GREEN RATINGS
(*dependent variable: logarithm of effective rent in dollars per square foot*)

	(1)	(2)	(3)	(4)	(5)
Green rating (1 = yes)	0.100		0.097	0.079	
	[0.016]***		[0.016]***	[0.016]***	
Energy Star (1 = yes)		0.100			
		[0.016]***			
LEED (1 = yes)		0.094			
		[0.052]*			
Building size (millions of sq. ft.)	0.261	0.261	0.235	0.189	0.193
	[0.028]***	[0.028]***	[0.027]***	[0.027]***	[0.030]***
Building class:					
Class A (1 = yes)	0.408	0.408	0.340	0.229	0.226
	[0.028]***	[0.028]***	[0.029]***	[0.030]***	[0.033]***
Class B (1 = yes)	0.226	0.226	0.203	0.152	0.149
	[0.027]***	[0.027]***	[0.027]***	[0.026]***	[0.028]***
Net contract (1 = yes)	0.015	0.014	0.010	0.009	0.016
	[0.024]	[0.024]	[0.024]	[0.024]	[0.028]
Employment growth (fraction)	0.765	0.756	0.773	0.682	0.468
	[0.312]**	[0.322]**	[0.293]**	[0.308]**	[0.421]
Age:					
< 10 years			0.134	0.177	0.149
			[0.045]***	[0.044]***	[0.054]***
10–20 years			0.141	0.146	0.150
			[0.025]***	[0.025]***	[0.028]***
20–30 years			0.113	0.112	0.128
			[0.023]***	[0.023]***	[0.025]***
30–40 years			0.097	0.090	0.089
			[0.018]***	[0.018]***	[0.020]***
Renovated (1 = yes)			0.019	0.016	0.022
			[0.018]	[0.018]	[0.019]
Stories:					
Intermediate (1 = yes)				0.145	0.156
				[0.021]***	[0.024]***
High (1 = yes)				0.086	0.090
				[0.025]***	[0.029]***
Amenities (1 = yes)				0.118	0.124
				[0.015]***	[0.016]***
Constant	2.151	2.158	2.093	2.187	2.299
	[0.029]***	[0.059]***	[0.050]***	[0.050]***	[0.060]***
Sample size	7,920	7,920	7,920	7,920	7,920
R^2	0.47	0.47	0.47	0.48	0.51
Adjusted R^2	0.42	0.42	0.42	0.43	0.41

Notes: Each regression also includes 694 dummy variables, one for each locational cluster. Regression (5) also includes an additional 694 dummy variables, one for each green building in the sample. Standard errors are in brackets.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

they are substantially larger. Because they are older, the control buildings are more likely to have been renovated than the green buildings in each cluster. We made additional efforts to estimate the premium for green buildings by identifying only the most "comparable" green and nongreen buildings in each cluster. In these comparisons, green and nongreen buildings are matched by propensity scores (Paul R. Rosenbaum and Donald B. Rubin 1983), estimated separately by

TABLE 3—REGRESSION RESULTS, OFFICE SALES PRICES AND GREEN RATINGS, 2004–2007
(*dependent variable: logarithm of sales price in dollars per square foot*)

	(1)	(2)	(3)	(4)	(5)
Green rating (1 = yes)	0.168		0.158	0.165	
	[0.051]***		[0.052]***	[0.052]***	
Energy Star (1 = yes)		0.191			
		[0.052]***			
LEED (1 = yes)		0.113			
		[0.172]			
Building size (millions of sq. ft.)	0.171	0.167	0.104	0.200	0.192
	[0.090]*	[0.089]*	[0.089]	[0.108]*	[0.125]
Building class:					
Class A (1 = yes)	0.164	0.161	0.032	0.104	0.143
	[0.066]**	[0.066]**	[0.078]	[0.084]	[0.099]
Class B (1 = yes)	−0.188	−0.187	−0.216	−0.184	−0.183
	[0.051]***	[0.051]***	[0.057]***	[0.058]***	[0.064]***
Employment growth (fraction)	−0.005	−0.005	−0.004	−0.006	−0.006
	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]
Age:					
< 10 years			0.201	0.207	0.161
			[0.149]	[0.147]	[0.207]
10—20 years			0.196	0.224	0.226
			[0.099]**	[0.100]**	[0.124]*
20—30 years			0.248	0.276	0.288
			[0.070]***	[0.070]***	[0.081]***
30—40 years			0.226	0.251	0.281
			[0.073]***	[0.075]***	[0.090]***
Renovated (1 = yes)			−0.096	−0.087	−0.071
			[0.046]**	[0.046]*	[0.053]
Stories:					
High (1 = yes)				−0.185	−0.232
				[0.092]**	[0.113]**
Intermediate (1 = yes)				−0.183	−0.189
				[0.057]***	[0.067]***
Amenities (1 = yes)				−0.043	−0.048
				[0.049]	[0.058]
Year of sale:					
2006 (1 = yes)	0.015	0.017	0.021	0.016	0.048
	[0.060]	[0.060]	[0.060]	[0.060]	[0.071]
2005 (1 = yes)	−0.040	−0.039	−0.039	−0.048	−0.034
	[0.056]	[0.056]	[0.056]	[0.055]	[0.065]
2004 (1 = yes)	−0.177	−0.175	−0.173	−0.200	−0.174
	[0.067]***	[0.067]***	[0.067]**	[0.067]***	[0.078]**
Constant	5.365	5.393	5.764	5.690	6.352
	[0.349]***	[0.337]***	[0.523]***	[0.542]***	[0.154]***
Sample size	1,813	1,813	1,813	1,813	1,813
R^2	0.43	0.43	0.44	0.44	0.49
Adjusted R^2	0.35	0.35	0.36	0.37	0.34

Notes: Each regression also includes 199 dummy variables, one for each locational cluster. Regression (5) also includes an additional 199 dummy variables, one for each green building in the sample. Standard errors are in brackets.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

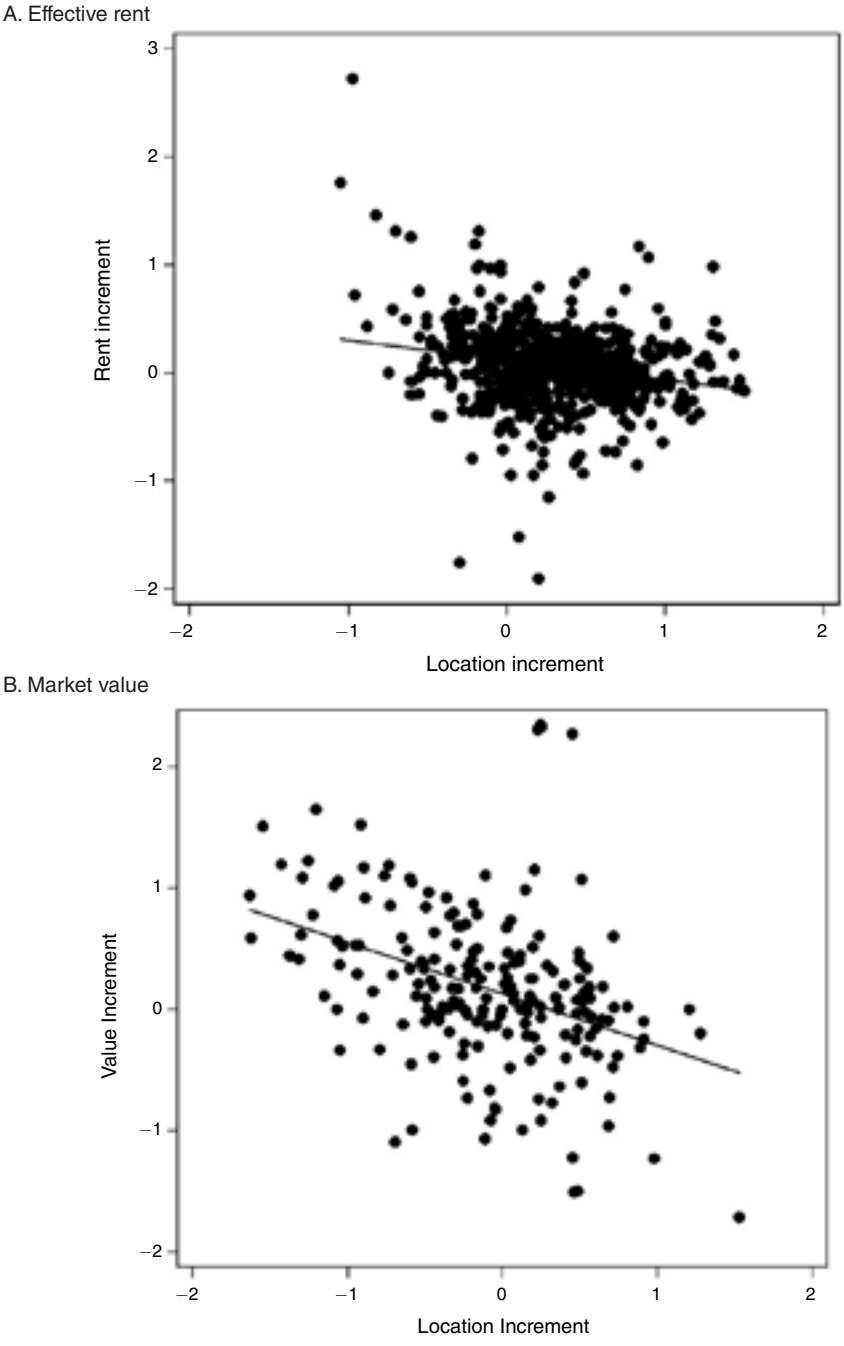

FIGURE 2. LOCATION INCREMENTS VERSUS INCREMENTS FOR ENERGY EFFICIENCY
(*proportionate changes*)

metropolitan area according to several specifications. The results of these comparisons, based conservatively (see Dan A. Black and Jeffrey A. Smith 2004) on the identification of "nearest neighbors" (thus much smaller samples), are consistent with the regression results based on

larger samples reported in Tables 1, 2, and 3. Rents and selling prices are estimated to be significantly higher for green buildings than for the most "comparable" nongreen buildings. These comparisons hold for a variety of stratifications of the sample of green and control buildings (e.g., large metropolitan areas). The comparisons are reported in detail in the longer version of this paper, available at http://urbanpolicy.berkeley.edu/research.htm. (See also, Eichholtz, Kok, and Quigley 2010.)

The distribution of green-rated buildings is not random within urban areas in the United States, and if this is not taken into account explicitly, statistical analyses can be highly misleading. Figure 2 illustrates this point. It presents the joint frequency distribution of the dummy variables estimated for each cluster and the dummy variables estimated for the premium for the green building in that cluster. (These are the coefficients estimated for clusters and for green buildings in equation (1b.)) This relationship is presented separately for the premium in effective rents and in market values. An inverse relationship between any cluster premium and its associated green premium is clearly apparent. The correlation coefficient between cluster and green increments is significantly different from zero at the 1 percent level. This suggests that the premium for a green building, relative to nearby buildings, tends to be larger in smaller markets and regions and in the more peripheral parts of larger metropolitan areas, where location rents are lower. Apparently, a green label for a building adds proportionately less in value at a prime location, in some part because land rents are higher (and utility costs are thus a smaller component of rent). But the label may also serve as an important signal in an otherwise lower-quality location.

B. *The Premium for Energy Efficiency*

As demonstrated in the previous section, there is a statistically significant and rather large premium in rent and market value for green labeled buildings. The statistical analysis does not identify the source of this premium, nor the extent to which the signal about energy efficiency is important relative to the other potential signals provided by a building of sufficient quality to earn a label. But the estimated premiums do vary within the stock of Energy Star–rated labeled buildings—which are all certified to be in the top quarter of comparable buildings in terms of source energy efficiency.

Analysis of the coefficients estimating a separate premium for each green building, relative to its cluster (equation (1b)), confirms that the probability that the mean rent or value premium is negative for this sample of buildings is minuscule.[12] Analysis of the sets of estimated premiums also confirms that a substantial fraction of the individual premiums are indeed significantly different from the mean premium.[13]

The rent premium associated with the label on any building represents the joint effects of the energy efficiency of the building together with other unmeasured, but presumably important, attributes of the building. The fact that the estimated premiums are different from each other suggests that systematic variations in the thermal properties of buildings—even among certified green buildings—may be reflected in economic performance.

For 122 of the 199 transacted buildings that were certified as energy efficient by the Energy Star program, we obtained detailed data on energy efficiency as reported in the application for certification in the program. More specifically, we have the underlying raw data on energy use

[12] For rents, the probability is 0.0007. For effective rents, it is 0.0000, and for selling prices the probability that the mean value premium for green buildings is smaller than zero is 0.0000.

[13] For rent, 52 percent of the estimated increments are significantly different from 0.028, for effective rent, 45 percent of the estimated increments are significantly different from 0.064, and for transaction values, 38 percent of the estimated increments are significantly different from 0.167.

as submitted by building owners (and verified by a professional engineer) on the Statement of Energy Performance (SEP) required by the EPA for certification.

Energy Star certification is awarded to buildings which are in the top quarter of comparable buildings in terms of *source energy* efficiency. The *source energy use* of a building incorporates all transmission, delivery, and production losses for both primary and secondary energy used in the building. This measurement, in British Thermal Units (BTUs) per square foot, facilitates a more complete comparison of the gross energy used by different buildings.[14]

In contrast, the *site energy use* of a building is the amount of heat and electricity consumed by a building as reflected in utility bills, also measured in BTUs per square foot. This represents the most salient cost of energy use for building owners and occupiers. The site energy use may include a combination of purchases of primary energy (e.g., fuel oil) and secondary forms of energy (e.g., heat from a district steam system).

The SEP certification provides both measures of energy use.

To account for the influence of climatic conditions on energy use, we standardize the energy consumption of each Energy Star–rated building by the total number of degree days in the CBSA in which it is located.[15] Presumably, more energy is needed for the heating of buildings in metropolitan areas with more heating degree days, and more energy is needed for the cooling of buildings in cities with more cooling degree days.

In this part of the analysis, we seek to distinguish the effects of the energy-saving aspect of the rating from the intangible effects of the label itself. These latter effects may arise from the reputational or marketing benefits of the labeled building or from other unmeasured aspects of quality in rated buildings.

Our statistical models utilize data on the thermal properties of the subsample of rated buildings and the climate conditions of the clusters in which they are located. The most straightforward of these takes the form:

$$\hat{\delta}_n = \alpha + \Theta_j \mathbf{Z}_{jn} + \hat{\delta}_n \quad . \tag{2a}$$

The dependent variable $\hat{\delta}_n$ is the estimate from equation (1b) of the increment to market value commanded by the green building in cluster *n,* relative to the control buildings in that cluster, holding constant the hedonic characteristics of the buildings. $\mathbf{Z}_{jn}$ measures the thermal and climatic attributes j of the green building in cluster n. As before, the Greek letters α and $\mathbf{\Theta}_j$ denote estimated coefficients, and η_n^* is an error term. Note that the dependent variable is the regression coefficient obtained from equation (1b), estimated with error. Thus equation (2a) is appropriately estimated by generalized least squares, incorporating the variance-covariance matrix of the parameters estimated in equation (1b). See Eric A. Hanushek (1974).

As an alternative, we also report estimates of the following form:

$$\hat{\varepsilon}_{in}^* = \alpha + \Theta_j \mathbf{Z}_{jn} + \eta_n^{**} . \tag{2b}$$

In this formulation the dependent variable, $\hat{\varepsilon}_{in}^*$, is the residual from equation (1a). It is the increment to market value commanded by the specific green building i that is not attributable to its hedonic characteristics, or to the average premium estimated for a green building, or to

[14] Energy Star. 2008. "Understanding Source and Site Energy." US Environmental Protection Agency. http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_benchmark_comm_bldgs.

[15] For each day with an average temperature higher than 65 degrees, the cooling day is the difference between that average temperature and 65 degrees. Alternatively, for each day with an average temperature lower than 65 degrees, the heating day is the difference between that average temperature and 65 degrees. Data are available by CBSA from the National Climatic Data Center (www.ncdc.noaa.gov).

TABLE 4—REGRESSION RESULTS, INCREMENT IN MARKET VALUE FOR MORE ENERGY EFFICIENT BUILDINGS USING SOURCE AND SITE ENERGY

	Model 2a		Model 2b		Model 2c	
Panel A. Source energy consumption						
Per degree day	−5.091		−4.345		−3.081	
	[1.679]***		[1.360]***		[1.564]*	
Per degree day (cooling)		−0.218		−0.194		−0.240
		[0.105]**		[0.085]**		[0.106]**
Per degree day (heating)		−1.766		−1.447		−1.116
		[0.581]***		[0.654]**		[0.659]*
Constant	0.424	0.405	0.359	0.333	5.738	5.687
	[0.098]***	[0.087]***	[0.088]***	[0.091]***	[0.287]***	[0.243]***
Sample size	122	122	120	120	120	120
R^2	0.07	0.08	0.08	0.08	0.32	0.34
Adj R^2	0.06	0.07	0.07	0.06	0.21	0.23
Panel B. Site energy consumption						
Per degree day	−11.039		−9.805		−5.712	
	[4.894]**		[3.922]**		[4.465]	
Per degree day (cooling)		−0.544		−0.442		−0.551
		[0.304]*		[0.247]*		[0.317]*
Per degree day (heating)		−5.280		−4.189		−2.938
		[1.917]***		[1.952]**		[1.941]
Constant	0.350	0.387	0.302	0.309	5.600	5.653
	[0.096]***	[0.089]***	[0.086]***	[0.090]***	[0.299]***	[0.259]***
Sample size	122	122	120	120	120	120
R^2	0.04	0.07	0.05	0.06	0.31	0.33
Adj R^2	0.03	0.05	0.04	0.04	0.20	0.22

Notes: Energy consumption is measured in kBTUs per square foot of gross space. See: www.energystar.gov/index.cfm?c = evaluate_performance.bus_benchmark_comm_bldgs. Standard errors are in brackets.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

its location in a specific cluster. Presumably, this increment reflects the energy efficiency of the specific building as well as random error.

Finally, we report estimates of the following form:

$$\log R_{in} - \hat{\gamma}_n = \alpha + \beta \mathbf{X}_i + \Theta_j \mathbf{Z}_{jn} + \eta_{in}^{***}. \tag{2c}$$

In this formulation, we rely upon the location-specific increment to value estimated for each cluster in equation (1a), $\hat{\gamma}_n$, using the entire sample of green buildings and control buildings. The dependent variable is the natural logarithm of value commanded by green building i in cluster n minus the value increment for other buildings in cluster n as estimated in equation (1a).

Table 4 presents estimates of models explaining the variation in the increment in market values as a function of the energy consumption of an office building. We estimate models (2a), (2b), and (2c) in several variants. We measure energy usage in thousands of BTUs per square foot of gross space per degree day, and we distinguish between BTU usage per cooling degree day and BTU usage per heating degree day, reflecting the operation of air conditioning and heating systems.

Panel A reports the increment to market value associated with variations in source energy usage, i.e., the total energy consumed in heating and cooling the building. Panel B reports analogous results for site energy use, i.e., the energy usage reflected in utility bills.

There is a clear inverse relationship between market value and energy usage—among buildings that have all been certified as energy efficient. This relationship holds for source energy use as well as site energy use. Further calculations—using the coefficients of model (2b)—show that

a 10 percent reduction in site or source energy use results in an increase in market value of 1.1 percent and 1.2 percent, respectively, over and above the average label premium of 16 percent.[16]

This raises the question whether the value increment of a certified building can be attributed solely to lower energy bills, or whether intangible effects—like marketing or perceptions of staff well being—play a role as well. To analyze the effect of energy efficiency upon market values, we make comparisons between the monetary value of energy savings and the consequent increment to market values. For each rated building, the SEP reports energy use in BTUs separately for electricity and natural gas. Using the state average price of electricity and natural gas,[17] we estimate the monetary savings associated with a 10 percent reduction in site energy use for each building. From the results in Panel A of Table 4, model (2b), and information on the heating and cooling degree days associated with each building, we can estimate the increment to value associated with this increase in thermal efficiency. The calculation implies that, on average, a dollar of energy savings yields 18.32 dollars in increased market value—implying a capitalization rate of about 5.5 percent. Alternatively, if the capitalization rate were known to be, say, 6 percent,[18] then the other desirable attributes of a more energy-efficient building (better engineering, design, etc.) would contribute about 8 percent to the increased valuation. An analogous calculation using source energy suggests that a dollar of source energy savings yields an increment of 20.73 dollars in increased market value, a value higher by 13 percent. These results may suggest that the value premium for green buildings is more than an intangible labeling effect.[19]

If lower energy bills were the only signal provided by the rating of a building, then we would not expect to find much difference in the way firms from different industries would use green space relative to conventional office space. For example, there would be no apparent reason for an oil and gas company to use relatively more green office space in a given cluster than would a food retailer.[20] But a more detailed investigation of the tenancy and occupancy of these buildings reveals significant differences in the degree to which firms from different industries rent green space (Eichholtz, Kok, and Quigley 2009). Ceteris paribus, firms active in the refining and energy sector are more likely to rent green space than conventional office space in the same cluster, despite the higher expense. Other relatively heavy users of green office space are in the finance, insurance, and real estate sector and in public administration, while manufacturing, retail, and wholesale trade are underrepresented in green office buildings. These cross-industry differences suggest that intangibles, which may differ with the nature of firms and industries, play a role in determining the economic premium for green buildings.

The data at hand cannot provide a conclusive answer to the question whether the value increments of green office space are attributable only to savings on energy costs, or whether intangibles also play a role. However, the empirical evidence (e.g., the capitalization rate required) provides at least a hint that intangibles do play a role, beyond the direct effects of savings on firms' energy bills.

[16] This calculation is based on the average site (source) energy use, which is 66 (197) kBTU per sq. ft., with a standard deviation of 17 (44) kBTUs per sq. ft., the average number of heating degree days, which is 3,166 per annum, and the average number of cooling degree days, which is 1,292 per annum.

[17] Data available from the Energy Information Administration (www.eia.doe.gov).

[18] The volatility of historic series of rental cash flows is comparable to the volatility of commercial gas and electricity prices. We can therefore approximate the discount rate for energy savings by the US national average of the capitalization rate for commercial office buildings. Based on data provided by CBRE Torto Wheaton Research, the transaction-weighted capitalization rate for the ten largest US cities is estimated to be 6.1 percent in October 2007.

[19] But, of course, the estimated increment to value varies among these buildings, and we cannot reject the hypothesis that the mean increment for site energy is 16.67 dollars (i.e., full capitalization at 6 percent) rather than the point estimate of 18.32 dollars, or that the mean source energy increment is 18.32 dollars (i.e., the same as that estimated for site energy) rather than the point estimate of 20.73 dollars.

[20] This relies upon the assumption that energy needs for commercial office space are similar across industries.

IV. Conclusions

This paper reports the only systematic evidence on the economic value of certification of green buildings to the US economy. In contrast to the anecdotal evidence on the economic effects of investments in environmentally sustainable buildings, the research reported here is based upon impersonal market comparisons.

For each commercial building in the country which has obtained a LEED and/or Energy Star label, we identified a control group consisting of all commercial properties located within about 1,300 feet. For this sample—about 10,000 buildings divided into about 900 clusters, each containing one labeled building and nearby unlabeled buildings—we relate market rents or selling prices of the properties to the hedonic characteristics of properties, within very small geographical areas of about 0.2 square miles.

The results clearly indicate the importance of a green label in affecting the market rents and values of commercial space. The results suggest that an otherwise identical commercial building with an Energy Star certification will rent for about 3 percent more per square foot; the difference in effective rent is estimated to be about 7 percent. The increment to the selling price may be as much as 16 percent.

These effects are large, and they are consistent. As noted above, at prevailing capitalization rates of 6 percent, the increment to effective rents (estimated in Table 2) implies that the value of a green building is about $5.5 million more than the value of a comparable unrated building nearby. From Table 3, the incremental value of a green building is estimated to be about $5.7 million more than that of a comparable unrated building nearby.

The premium in rents and values associated with an energy label varies considerably across buildings and locations. The premium is negatively related to the location premium for a building, within and between cities: a label appears to add more value in smaller markets and regions and in the more peripheral parts of larger metropolitan areas, where location rents are lower. We disentangle the energy savings required to obtain a label from the unobserved effects of the label itself, which could serve as a measure of reputation and marketing gains obtained from occupying a green building. The energy savings *per se* are important. A 10 percent decrease in energy consumption leads to an increase in value of about 1 percent, over and above the rent and value premium for a labeled building. However, the intangible effects of the label itself—beliefs about worker productivity or improved corporate image, for example—also seem to play a role in determining the value of green buildings in the marketplace. Not all of a building's energy use measured by the Energy Star label is directly linked to the ultimate energy bill, yet reducing that energy consumption yields positive effects on a building's value.

Finally, these results provide evidence on the importance of publicly provided information in affecting the choices of private firms about energy use. The energy efficiency of capital inputs can be signaled to the owners and tenants of buildings very cheaply,[21] and the evidence suggests that the private market does incorporate this information in the determination of rents and asset prices. Even if the external effects of energy efficiency were very small, this information program would seem to be a sensible use of public resources.

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EXHIBIT E

Certified Home Performance: Assessing the Market Impacts of Third Party Certification on Residential Properties, by Ann Griffin, Earth advantage Institute, May, 2009

Certified Home Performance:

Assessing the Market Impacts of Third Party Certification on Residential Properties

Ann Griffin, Earth Advantage Institute

with
Ben Kaufman, GreenWorks Realty and
Sterling Hamilton, Hamilton Investments, LLC

May 29, 2009

Contents

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II. Abstract

The report presents an analysis of the market performance of third-party certified sustainable residential properties in the Portland and Seattle metropolitan areas. In each location, a sample of third-party certified homes was selected and comparable homes were found. The author documents that certified homes in the Seattle metro area sold at a price premium of 9.6% when compared to noncertified counterparts, based on a sample of 68 certified homes. In the Portland metro area, certified homes sold at a price premium ranging between 3% and 5%. In addition, the certified homes stayed on the market for 18 days less than noncertified homes. These results are based on a sample of 92 certified homes and comparable properties approved by a project appraiser.

This investigative research effort also includes surveys and interviews with the builders of third-party certified homes and their residents. The author discusses the inherent limitations of current valuation practices for homes with sustainable features. Finally, the report includes a synopsis of related research on the relationship between marketing initiatives and the sale price of third-party certified properties.

III. Executive Summary

Certified homes are worth more. This report explains the basis for this statement, using an analysis of third-party certified sustainable homes in the Seattle and Portland metropolitan areas. Moreover, the report shows that there are several important issues inherent in this seemingly simple statement. The report concludes with recommendations to further expand the study of the market performance of third-party certified sustainable homes. It supports heightened collaboration among residential appraisers, real estate brokers, homebuilders, and sustainable building advocates to improve a common understanding of the multiple issues involved in home valuation and communicating the results to a larger audience.

How one defines a building's value may vary. Market sales information is based on standard approaches to building appraisal that do not account for performance-based cost savings. Further, standard approaches do not consider resident health or broader environmental benefits that result from the measures required to achieve third-party sustainable certification. Public understanding of general sustainability concepts has certainly improved in the past 5 years. At the same time, more homebuilders recognize the potential market advantages of building certified homes. However, for many consumers and some homebuilders, the connection between quality home construction and sustainability is not always understood.

<u>Comparable Property Study Results</u>
Earth Advantage Institute selected Taylor Watkins of Watkins & Associates in Portland to serve as the project appraiser for the comparable property analysis. Watkins recommended the parameters for defining a comparable home and reviewed suggested comparables for their suitability. The parameters used to identify a comparable home are listed in the study. The goal was to test the hypothesis that certified homes would demonstrate improved market performance in terms of sales price and time on market than comparable, noncertified homes.

In Portland, a sample of 92 certified homes and 340 comparable homes was compiled. The certified homes were built between 2000 and 2008, with a majority sold in 2006 and 2007. Most certified homes were matched with 3 or 4 comparables. Certified homes were geographically distributed throughout the metro area. The Portland study found that:

- Certified homes sold 18 days faster than noncertified homes.

- Certified homes sold for 3% to 5% more than noncertified homes. In a statistical analysis with a 95% level of confidence, the overall price difference was found to be 4.2%.

In Seattle, a sample of 68 certified homes and 207 comparable residences was determined. Like the Portland sample, most certified homes were matched with 3 or 4 comparable homes. The Seattle analysis also documented superior market performance in terms of the sales price achieved.

- The expected percentage change for sales price was found to be 9.6% more for the third-party sustainable certified homes.

- The certified homes did not sell faster, and stayed on the market an average of 5 days longer (or 40% more time on the market).

These findings are positive factors that will work to the benefit of sustainable home builders and consumers, providing welcome news during a time of reduced home market activity.

Consumer Input

The same issues that determine how much someone is willing to pay for a house - location, amenities, and size – are involved whether one is shopping for a certified sustainable home or not. However, residents living in third-party certified homes should also understand the sustainable features and the positive impact of those features on the longevity of their homes. The study recommends public education so that current and future residents of certified homes will have a greater understanding of those benefits.

Earth Advantage Institute, Master Builders Association of Pierce County, and Olympia Master Builders conducted surveys of residents living in either Earth Advantage® or Built Green® certified homes. Residents value the sustainable attributes of their homes, particularly energy efficiency and improved indoor air quality. Of those surveyed, 90% reported that they would choose a certified versus a noncertified home for their next residence if all other factors were equal. Collectively, the residents also agreed that they would pay more in order to continue to live in a sustainable home. Eighty percent of the survey respondents living in a third-party certified home reported that they would pay up to 5% more in order to move into a home that had been certified as sustainable versus one that had not.

Self-certified and third-party certification. Consumer surveys were taken from residents living in both self-certified and third-party certified homes. In many respects, their answers were similar. Both groups agreed that energy efficiency and indoor air quality were extremely important. In one area of difference, residents of self-certified homes reported that sustainable certification

was less of an influencing factor in their decisions to buy a particular home than did residents of third-party certified homes. (Thirty-one percent of residents in self-certified versus 61% of residents in third-party certified homes reported that the certification was an influence in their decisions to buy their homes). Additionally, 56% of third-party certified home residents reported that their utility bills had been lowered by moving into a certified home versus 46% of noncertified home residents.

Homebuilder Input

Thirty-five builders responded to an online survey and an additional 10 Earth Advantage homebuilders provided in-person interviews. The home builders answered questions regarding any costs associated with building a third-party sustainable certified home and trends in those costs over the past five years. They were also asked to assess current appraisal methodologies.

Home builders responded that awareness for sustainable features in a home had grown sigificantly over the past five years. Despite this, however, demand for third-party certified sustainable homes had not directly increased as a result.

The survey asked if there were added costs associated with building a sustainable residence. The majority of the responsents – 74% - indicated that building a home to certification standards was more expensive than building a home to code. However, they also noted that the change in cost is coming down. (See Table 5.4.) The increase in construction costs was observed to be between 5 and 10%. As builders become more experienced with the specifications of a given program, and as their networks of sub-contractors and other knowledgeable professionals become more extensive, they have seen some of these cost increases go down. Home builders join the call for increased public awareness related to sustainable building practices and increased collaboration among sustainable building advocages

Recommendations for Action

The interviews and surveys conducted for this research clearly point to a number of recommended actions. The following list is further detailed in the body of the report:

1) Increase tracking of third-party certified sustainable homes
2) Conduct property comparable work in other areas of Oregon and Washington
3) Develop and support professional training opportunities
4) Work with homebuilder and professional realtor associations to increase consumer knowledge about sustainable homes
5) Develop additional educational tools (e.g., a glossary of terms related to green building, an online resource guide)

IV. Project History and Summary of Key Findings

The Pacific Northwest is a stronghold for sustainable building and design. The region has earned a national and international reputation for public policy and public sentiment that supports sustainable living. Several green building and energy efficiency certification programs are available to prospective property owners in the region, including Built Green, Earth Advantage®, ENERGY STAR®, and LEED for Homes®. As of September 2008, there were close to 10,000 third-party Earth Advantage certified homes in Oregon and Washington. An additional 10,000 homes in Washington have achieved Built Green Home certification, including self-certified and third-party certified homes.

However, while demand for green buildings has increased appreciably over the past 10 years, many financial, appraisal, and real estate professionals do not have an adequate understanding of sustainable building practices (Jamison, 2007). This has resulted in a lack of consistent measurement and the potential undervaluing of sustainably built projects.

The Green Building Value Initiative (GBVI) started in the summer of 2007 when a number of leading green building and local government organizations in the Pacific Northwest met to discuss a growing need: demonstrating the practical value of sustainable certification for residential and commercial properties. According to Rachel Jamison of the Washington State Department of Ecology,

> GBVI was created to determine whether green building certification truly adds value to residential and commercial real estate projects. If so, the GBVI will determine the most effective method of communicating this to the real estate finance, appraisal, lending, and investment communities.

In 2009, a coalition of private industry, nonprofit and government organizations will release a series of papers examining certified residential and commercial properties through case studies, property comparisons, interviews, and surveys. This report is part of that effort.

Investigative research into the value of property certification and the valuation of sustainable building practices can be traced back to the efforts of the Vancouver Valuation Accord in 2007. In March of that year, leaders of valuation groups from throughout North and Latin America, Europe, and various Pacific countries met in 2007 in Vancouver, BC, to discuss the valuation implications of sustainability and how they should be approached on a global basis. The result of that meeting was the Vancouver Valuation Accord, a document that was signed by representatives from 20 countries and that adopted the definition of sustainable development created for the United Nations by the Brundtland Commission in 1987:

> …development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Research related to market performance of high performance buildings has followed two tracts: residential and commercial. This report presents the findings related to the residential sector in Oregon and Washington. Specific research activities included:

- residential property comparables (specific comparison between certified and comparable non-certified homes as determined by a certified appraiser)
- home builder surveys and interviews
- residential appraiser interviews
- surveys of residents living in certified homes
- study on the impact of marketing and consumer education to home sales performance
- residential property case studies (published separately)
- commercial property case studies (published separately)

The property comparison work focuses on Portland and Seattle. In each metro area, comparable homes were identified for a large number of certified homes. The sample sizes of certified homes were 92 and 68 in the Portland and Seattle metropolitan areas, respectively. Additional property comparison work on smaller samples of homes was completed in central Oregon and in the Willamette Valley.[1]

Sustainable Building Valuation

The Green Building Value Initiative recognizes the importance of value in discussions related to sustainable property development and certification. The value that is assigned to a single- or multi-family home may vary depending on the context of the assessment. Residential appraisers are responsible for determining the worth of a home in a given real estate market. Appraisal reference guides commonly offer three different approaches to defining value (sales comparison, cost approach, and income approach, although these are more frequently associated with commercial appraisals). The term *market value* is generally defined as the price that could be obtained for the sale of a given item in current market conditions. This study does not choose one specific definition of value over another. Rather, it points to the lack of a common, comprehensive definition of *value* as a primary obstacle in recognizing the contributions of sustainable home features. Measuring the added value to a home resulting from sustainable features, or from third-party sustainable certification as a whole, remains a challenge.

Sustainable building advocates face a challenge when trying to document the market value or performance of sustainable buildings. This is partially due to the lack of existing certified projects. This challenge has been less evasive as the number of certified properties in the United States has increased. However, the tools that property appraisers customarily use have not been modified to reflect the more complex valuation required for a sustainable or *triple-bottom line* approach. Valuation professionals "need to rely more heavily upon thorough analysis of sustainability attributes at the property level to ensure accurate identification of costs, benefits and risk" (Chappell, 2007).

Another consideration stems from the fact that a building cannot simply be labeled *sustainable*. Green building certifications vary in terms of the building elements that are evaluated under and the performance metrics associated with them. Many builders may not pursue certification at all but will incorporate one or more sustainable or high performance building features into their

[1] The budget for this residential property analysis did not make it possible to retain residential appraisers in either of these two areas. The sample size of homes in these areas was very small (less than 12 homes per area) and therefore not statistically significant.

projects. In some respects, the residential sector has lagged behind the commercial sector in terms of understanding property value implications related to sustainable certification (Pitts & Jackson, 2008). The Pacific Northwest may be at an advantage in this regard, as the region has more sustainable certified homes than any other U.S. region. As in the commercial sector, residential appraisers will become better able to evaluate properties as the number of completed projects grows.

Studies on the relationship between energy efficiency and resulting home values have shown that home values do increase as efficiency improvements are made (Nevin, 1998). Nevin suggests that home values increase by $11 to $21 for every dollar reduction in annual fuel expenditures. Homeowners obviously review a number of factors before buying a new home. Anticipated home energy savings is one factor that may be considered, particularly as domestic energy prices increase or become more uncertain. Similar to other sustainable characteristics in certified homes, energy efficient components can only be valued according to current industry norms and understanding.

> A key challenge in assessing the value implications of energy management strategies is gauging the market's acceptance of those strategies. This factor, coupled with the knowledge that the appraisal community relies heavily upon empirical data, means new or unorthodox approaches to building construction and operations will require a greater burden of proof to support performance projections. (Better Bricks, 2007)

Appraisers in the commercial sector are concerned with the value of real estate assets as investment opportunities. Residential properties (particularly single-family homes) are traditionally viewed as long-term assets for homeowners rather than as investments. This may contribute to the lack of professional literature on the appraisal of sustainable residential properties.

A growing number of builders and real estate brokers are aware of the limitations of the existing home valuation process. EAI staff interviewed three residential appraisers regarding the process of conducting an appraisal on a certified home. While three interviews obviously do not represent a cross-cross section of appraisers, they support trends observed in the wider market. Each appraiser agreed with Linehard, suggesting that there is a need to change regular residential appraisal practices in order to allow individual brokers more flexibility with documentation. The interviewees observed that more training for brokers and financial lenders regarding the specific attributes of energy efficient equipment and sustainable design features will benefit the evaluation of sustainable homes. These last two points were reiterated in additional interviews and surveys with home builders and consumers.

<u>Residential Property Analysis: Summary of Key Findings</u>

- *Sustainable third-party certified homes sell faster*. Certified homes stay on the market for a shorter period of time, selling 18 days faster in the Portland metro area in 2007-08. In the Portland metro area, the certified homes were primarily Earth Advantage® or Earth Advantage and ENERGY STAR® homes. In Seattle, the homes were primarily Built Green certified.

- *Certified homes sell for more than noncertified homes*. In the Seattle metro area, third-party certified sustainable homes were found to sell for 9.6% more than noncertified homes. In the Portland metro area, certified homes sold for 4.2% more than noncertified homes. This and the previous finding are based on appraiser qualified property comparable results described in section V.

- *Market aggregate data, Portland*. Price premiums for certified homes were observed in market-wide sales data for the first year that certified homes were tracked by the Portland Multiple Listing Service. Certified homes sold for 11% more than noncertified homes between May 1, 2007 and April 30, 2008 in the Portland metropolitan market (not including Clark County).

- *Market aggregate data, King County, WA*. A 4% price premium for newly constructed, green-certified homes was found in King County, WA for the 9-month period ending May 31, 2008. On a per square foot basis, certified homes sold for 37% more than noncertified homes.

- *Home builders believe that third-party verification adds value*. Almost all of the builders who contributed to this study (98%), stated that third-party sustainable certification adds to the value of the product. However, they were also concerned that current residential appraisal practices do not sufficient recognize the positive benefits of such certification.

- *Home buying public needs to better understand the value and significance of certified sustainable homes.* Increased public awareness regarding sustainability in the general media has not necessarily translated into a greater understanding of green home certification. Home builders who build Earth Advantage and Built Green homes asserted that homebuyers need to learn more in order to appreciate the full quality and value of their products. Long-term durability, high quality materials, improved indoor air quality, and increased energy efficiency are part of a certified home.

- *Home values should incorporate performance measures.* Residential performance measures should be incorporated into standard home valuation. For example, long-term reductions in home utility and repair costs should be a considered when a newly built or remodeled home is appraised for sustainable and energy efficiency features.

- *More dynamic appraisal models are needed*. Dialog among sustainable building advocates, home builder associations, residential appraisers, realtors, and financial institutions regarding more accurate and dynamic residential appraisal should continue. Such dialog is needed in order to develop the mechanisms for recording sustainable improvements in a home and monitoring those improvements' ongoing performances.

- *Certified homes perform better if the home buyer understands the quality and systems differentiation of that home*. A certified home is more likely to earn a price premium if the quality and performance savings of that home is clearly communicated to the future home resident.

V. Residential Property Analysis – Portland and Seattle Metropolitan Areas

This study was undertaken to test the hypothesis that sustainable third-party certified homes have a market advantage over comparable noncertified homes based on sales prices and time on the market. The homes in this study were all certified to Earth Advantage®, ENERGY STAR® or Built Green® (Four- or Five-Star) standards.

How have certified homes performed in the marketplace? The report explores this question in two ways. First, market-wide aggregate data regarding certified and noncertified homes are reviewed. Second, a specific sample of certified homes and the accompanying property comparables as determined by a qualified residential appraiser are analyzed. This was done in both the Portland and Seattle metro areas.

RMLS and NWMLS Data – The First Year of Tracking Certification

The section begins with an examination of sales data from the Regional Multiple Listing Service (RMLS) in Portland and the Northwest Multiple Listing Service (NWMLS) in Seattle. In 2006, EAI was instrumental in successfully lobbying RMLS to modify its database to include the new certification field. Seattle followed suit due to similar efforts. Both RMLS and NWMLS started to track the sales of sustainably certified homes in 2007. They were among the first MLS organizations in the nation to do so. NWMLS provides information on the sale of homes that have received a Built Green, ENERGY STAR, or LEED for Homes certification. RMLS allows real estate brokers to list new homes as Earth Advantage, co-branded Earth Advantage/ ENERGY STAR, ENERGY STAR, or LEED for Homes.[2]

Between May 1, 2007, and April 30, 2008, 833 newly constructed housing units in Multnomah, Clackamas, Columbia, Washington, Yamhill, and Clark counties were listed as Earth Advantage homes, Earth Advantage/ENERGY STAR co-labeled homes, ENERGY STAR, or LEED for Homes. This number is equal to 13.6% of all newly constructed units in the metro region, according to RMLS.

Certified homes performed better than noncertified homes, in terms of two key metrics: sales price and time on the market. The average sales price among all noncertified homes in the Portland, Oregon metropolitan area (new and existing) was $346,400. Noncertified new homes in the same market sold for an average of $390,400. Sustainable third-party certified new homes sold for an average of $431,900.

On a square foot aggregate basis, the certified homes in Portland sold for $223 per square foot. The noncertified homes sold for $196 per square foot. Newly constructed certified homes sold for 13.8% more than noncertified homes when compared in this way.

In the Portland metro market, not including Clark County, WA, new and existing homes stayed on the market for an average of 73 days. New homes in the same area stayed on the market for

[2] In 2007 and 2008, RMLS also provided the option of classifying a certified home as *other*. In 2008, RMLS discontinued this option, recognizing that the open-ended nature of such a response would make year-to-year comparisons impossible.

an average of 99 days. Sustainable new homes in the same market sold one-third faster, staying on the market for an average of 66 days.

The Northwest MLS reported similarly positive results for the first year of tracking certified home sales data. Sustainably certified homes (or *E-Cert homes*) built in 2007 accounted for 16.7% of the single-family homes and 18.7% of the condominium sales in King County in the 9-month period ending May 31, 2008 (Green Works, 2008).

NWMLS data shows that new construction E-Cert single-family homes sold in 18% less time, sold for 4% more, and were 25% smaller than noncertified homes. Priced per square foot, E-Cert homes were 37% more valuable. New construction E-Cert condominiums sold for 3% more and were 20% smaller than noncertified new construction condos. Priced per square foot, E-Cert condos were 28% more valuable than noncertified condos.

	Portland metro area	Seattle metro area
New homes, noncertified	$390,400	$470,000
New homes, certified	$431,900	$487,000
Percentage increase	10.6%	3.6%
New homes, noncertified per square foot	$196	$202
New homes, certified per square foot	$223	$278
Percentage increase, per square foot	13.8%	37.4%

Portland data provided by RMLS and analyzed by Earth Advantage Institute
Information for Portland metro area, less Clark Co.
Seattle data provided by NWMLS, analyzed by Green Work Realty.

The reports of improved sales performance in two major metropolitan areas were certainly encouraging for many professionals in the green building industry. In order to demonstrate that the primary component of comparison (the main difference between third-party certified homes and comparable traditionally built homes) was the evidence of sustainable certification, property comparables were required. Earth Advantage Institute and Built Green undertook the comparison analysis.

Property Comparison Work - Methodology

Ann Griffin of Earth Advantage Institute led the property comparison work for the Portland metropolitan area and Ben Kaufman of Green Works Realty completed the work for the Seattle metropolitan area. Watkins and Associates were retained as the project appraiser for the Portland analysis. The methodology described in this section was endorsed by Taylor Watkins, the project appraiser, and used in each of the comparable property analyses. The information gathered provides positive results regarding the performance of certified homes in the residential marketplace.

The Portland Regional MLS (RMLS) office provided Earth Advantage Institute with access to its home sales information. Using RMLS, researchers working with Earth Advantage Institute drew between 3 and 7 comparables for each certified property in the sample, with the majority having 3 or 4 comparables. The selected sample contains 92 certified properties in the Portland metropolitan statistical area (including Washington, Yamhill, Multnomah, and Clackamas Counties in Oregon, and Clark County in Washington). The project appraiser developed the guidelines to define comparable properties and confirmed the suitability of each comparable property selected. In Seattle, Ben Kaufman of Green Works Realty conducted a similar study using the same methodology.

Comparable properties were defined as residences that were

- sold with a closing date no more than 6 months prior to the closing date of the subject property
- located within the same neighborhood or sub-neighborhood
- constructed in a similar style based on photographs and staff determination
- constructed to the same degree of quality (e.g., design and materials)
- in the same age range (built within 10 years prior and 5 years after the subject home)
- approximately the same size (within a range from 15% smaller to 5% larger in square feet)
- approximately the same value (with a final sales price from 20% below to 10% above the sales price of the subject home)
- built with no distinguishing green features

The project appraiser reviewed an initial sample of property comparables to verify that EAI was gathering properties that were suitable for analysis (i.e., properties that may be deemed comparable according to professional standards in the residential appraisal field). The project appraiser approved between 2 and 7 comparables for 92 certified properties. Several dozen suggested comparables were rejected by the project appraiser for not satisfactorily meeting the needed criteria for a comparable home.

For each set of subject and comparable properties, the average price difference and average percentage change in price was determined. Rather than just the average price difference, the average percentage change in price was used in an effort to normalize the distribution of home prices. In order to account for the different number of comparable homes found for each subject home, a weighted average was calculated to determine differences in sales price. The number of days on the housing market for each subject and comparable home were also compared.

The study determined that newly constructed residential properties that obtained a sustainable certification sold on the market at a value that ranged between 3.3% and 5.1% higher than comparable properties that had not been certified. This finding was based on a sample of 92 homes at a statistical confidence level of 95%. The difference in home price between a certified home and a noncertified comparable home was found to be 4.2%.

Portland metro area property comparison

1. Certified homes sell faster than noncertified homes. Within the Portland market, homes that had a sustainable certification were purchased 18 days faster than noncertified homes.

2. Certified homes sell for more than noncertified homes, by a difference ranging from 3% to 5%. The margin of price difference was found to be a 4.2%.

Days on Market

As previously noted, the certified homes sold 18 days faster than noncertified homes. Stated as a percentage rate, the certified homes sold 30% faster. For most consumers, a two-week plus period translates into a month's mortgage payment. As a result, consumers selling certified homes are able to potentially realize important cost savings. Builders also realize the benefits of a property that sells faster. Builders may be able to close on outstanding construction loans more quickly and have shorter inventory turnover times, contributing to positive cash flow.

Reference has been made to the relationship between overall home value and the number of days on the market, with some observers finding that more expensive homes require longer time periods to sell. To determine if this was the case in the selected sample of Portland homes, EAI staff sorted the homes by sales price and examined the resulting pattern in days on the market. A positive linear relationship was not observed; the selling price of the home did not appear to have an impact on days on the market. Certified homes sold faster than noncertified homes. However, more expensive properties did not necessarily take longer to sell.

Seattle metro area property comparison

3. Certified homes in the Seattle metropolitan area sell for more than noncertified homes. The price premium based upon a sample of 68 subject homes was found to 9.6%.

4. In the Seattle study, certified homes remained on the market for an average of 5 days longer, or required 40% more time to be sold than non-certified comparables.

Home Performance and Home Value

The property comparison sections of this study focus on market performance in terms of sales price and time on market. These are standard economic performance metrics. Value may also be defined as the overall benefits of a home divided by its costs. Based on this definition, operational issues become more important. Occupants living in certified homes enjoy a number of benefits, such as reduced utility expenses, improved indoor air quality and accompanying health benefits, and reduced maintenance costs associated with high quality materials and durable construction methods. If these benefits were capitalized, then the value of a home would certainly increase. Larger exogenous economic factors resulting from reduced green house gas emissions could also be calculated and added to the overall performance measurements of a home.

Green commercial buildings are sometimes referred to as *Super Class A*, or more commonly as *high performance* buildings. Reduced utility costs and waste removal costs have been documented in a growing number of building case studies. According to USGBC, "(commercial) green buildings save an average 30 percent of energy costs, 35 percent of carbon costs, 30-50 percent of water use costs and 50-90 percent of waste costs" (Nicolay, 2007).

Reduced costs in the same categories are also observed in residential buildings. The following section of this report describes the survey results of homeowners living in Earth Advantage certified homes. More than half (56%) stated that their utility bills were lower in their current home than in their previous (noncertified) home. National surveys have produced similar results, indicating that the prospect of reduced utility costs also attracts prospective homebuyers. McGraw Hill Construction and the National Association of Home Builders conducted a survey of homeowners in early 2007. Sixty-three percent of the respondents reported lower operating and maintenance costs as the key motivation behind buying a green home (Environmental Leader, 2007). Nearly 50% reported environmental concerns and family health as motivators (Environmental Leader, 2007).

A number of articles in professional appraisal journals have cited the need for increased understanding and more detailed reporting with respect to appraisal reports related to sustainably constructed and appraised buildings, both residential and commercial.[3] For example, Claire Nicolay of Loyola University of Chicago, a frequent contributor to articles related to real estate appraisal, observed that

> (A)lthough the appraisal framework for a green building will not fundamentally change, appraisers will have to enhance their knowledge of key sustainable features and potential value impacts, similar to the type of information they have had to learn in recent years to better understand building-related telecommunication changes, American Disabilities Act legislation, and the effect of the securities markets on capital flows. (Nicolay, 2007)

The basic job that appraisers undertake will not change in terms of needed research, but research on a wider variety of topics will be necessary. These topics can include the performance specifications of energy efficient heating and cooling systems, home infiltration, home material sourcing, and construction site impacts on the local area.

> The current lack of a significant body of empirical data (comparable sales, surveys of property performance, and return expectations)…valuation professionals (will need to) rely more heavily upon thorough analysis of sustainability attributes at the property level to ensure accurate identification of costs, benefits and risk. (Lowe & Chappell, 2007)

In 1999, the National Association of Home Builders president, Charlie Ruma, stated that "lenders, appraisers and investors need to recognize the enhanced value in housing that comes from environmentally-efficient building practices so that buyers are given the credit" (McCuen, 2007). McCuen referred to the creation of home mortgage programs that credit sustainable home improvements as a step in the right direction.

[3] See Reference section and articles by Chappell, Corps, Muldavin, and Nicolay.

VI. Consumer Surveys – Input from Residents of Certified Homes

Consumer understanding and attitudes regarding sustainable home features play an important role in residential markets. The GBVI Steering Committee conducted surveys to identify consumer attitudes toward the sustainable attributes of their homes. Survey responses also provided some social demographic information for home residents.

Residents living in certified homes value the sustainable attributes of their houses, particularly their energy efficiency and improved indoor air quality. Of the respondents, 90% reported that they would choose a certified versus a noncertified home for their next place of residence, if other factors (e.g., location, price, quality) were equal. If cost were an issue, survey respondents continued to favor living in a certified home: 80% of the respondents from third-party certified homes reported that they would pay up to 5% more for their homes. In the case of a $400,000 home, a 5% premium is the equivalent of $20,000.

Ninety-eight percent of the survey respondents said that they would elect to purchase a green branded home over a home that was not green branded. Thirty-six percent of those surveyed indicated that they would pay up to 10% more on a $300,000 home that incorporated Earth Advantage measures.

In another regional consumer survey conducted at the Greener Homes and Gardens Expo in May 2005, 35% of the respondents indicated that Earth Advantage certification had had a direct influence on their home purchases. This finding in a more recent survey of home residents conducted in 2008, and described below.

Consumer Survey Description

Three organizations conducted consumer surveys among residents living in either Built Green or Earth Advantage certified homes: Earth Advantage Institute, the Master Builders Association of Pierce County, and Olympia Master Builders. Each organization used the same basic questionnaire. Among the three organizations, 248 people completed the survey either electronically or via mail. The surveys were conducted in May and June 2008.

Organization	**Number of Responses**
Olympia Master Builders	32
MBA of Pierce County	33
Earth Advantage Institute	183
TOTAL	248

Earth Advantage homes are third-party certified homes. Built Green Washington recognizes 5 levels of certification. Homes that receive Four- or Five-Star certification are third-party certified homes. Survey responses were analyzed separately by organization to determine if there were differences in attitude among residents of self-certified and residents of third-party certified homes. More importantly, the property comparison work was conducted on third-party certified homes. Survey responses were sorted accordingly to be consistent.

Residents of Third-party Certified Homes

In June 2008, Earth Advantage Institute mailed 3,000 surveys to residents living in Earth Advantage certified homes. EAI received a 6% return rate or 183 responses. A copy of the consumer survey and a summary of responses are included in the appendices. Importantly, the majority of survey respondents indicated that the sustainable certification positively influenced their decisions to purchase their particular homes.

Question: Did sustainable certification have any influence on your decision to buy your home?	**Response**
Yes	61%
No	39%

The survey asked about specific home attributes, including energy efficiency and indoor air quality. Respondents were asked to rank the importance of these attributes, on a scale from 1 (not important) to 5 (extremely important). Energy efficiency was considered an important or extremely important characteristic by 77% of the survey respondents, while only 3% answered that energy efficiency was not important. Residents living in certified homes also reported lower utility costs. More than half of the Portland respondents (56%) believed that their average utility costs (gas and electric) were lower in their new certified homes than their previous traditionally built homes.

Table 4.2. Important issues among residents 3rd party certified homes

Attribute	**Ranking**	
Energy Efficiency	(5) Extremely important	44.2%
	(4)	32.6%
	(3)	13.8%
	(2)	6.6%
	(1) Not important	2.8%
Indoor Air Quality	(5) Extremely important	43.4%
	(4)	28.0%
	(3)	19.2%
	(2)	7.1%
	(1) Not important	2.2%
Lower Utility Costs	Lower	55.6%
	Higher	13.5%
	The Same	19.1%
	Don't Know	11.8%

The survey asked consumers whether, when presented with two homes that were otherwise similar except for certification, they would choose the sustainably certified home. The majority (90%) responded that they would select the certified home. The survey also asked residents to specify how much more they might be willing to pay and the specific features that they valued

the most. Eighty percent indicated that they would be willing to pay up to 5% more to live in a certified home.

The consumer survey indicates that residents living in certified homes will choose a certified home for their next purchase and that they are willing to pay more for a certified home. The green home features that residents would be the most willing to pay for include energy efficient hot water systems, an energy efficient furnace, and improved indoor air quality. The responses are summarized in Table 4.3.

Table 4.3 Please check/describe the particular sustainable feature or features in which you would be most likely to invest.

energy efficient hot water heater/tankless water heater	89%
energy efficient furnace	87%
indoor air quality	69%
construction practices that utilize reclaimed/recycled materials and recycling	49%
on-site renewable energy source	42%
grey-water capture and re-use	27%
other feature(s)	10%

Note: Percentages may not add up to 100 due to rounding.

Table 4.4. What would be the maximum amount ***more*** you would be willing to pay for these added benefits and features on a $400,000 home? (1% 3% 5% 7% 10% 15%+)

$4,000 (1% more)	23%
$12,000 (3% more)	31%
$20,000 (5% more)	26%
$28,000 (7% more)	4%
$40,000 (10% more)	10%
$60,000 (15% more)	2%
$0 (I wouldn't be willing to pay more)	4%
Didn't answer question	11%

Other studies regarding owner preferences with respect to investments in sustainable homes have reached similar conclusions. According to the Concrete Network, a 2002 report found that 85% of homeowners would spend 1% more for an integrated concrete form (ICF) home, while 23% would spend 5% more for the same improvement (Balogh, 2008). While consumers have indicated that they would be willing to pay more for a sustainable home (perhaps up to 10% more or greater), the builders surveyed for this report did not generally have the same impression of consumer willingness to pay such an added cost.

Social Demographics of Earth Advantage Survey Respondents

Survey respondents provided basic demographic information about themselves. These questions were added to help determine how residents of certified homes might compare with the general population. Any observed trends could be used to better understand consumer behavior and target potential homebuyers.

In terms of gender, Earth Advantage consumer survey respondents were fairly evenly split between female (51%) and male (48%). Typical household size was reported as 2 (40%), 3 (21%) or 4 people (21%). People completing the survey reported their age as 39 or younger (51%), 40 to 64 (42%) or 65 or older (7%). Their education and income levels are reported in Tables 4.5 and 4.6.

Table 4.5. Education Level of Earth Advantage home residents

Answer Options	**Percent**	**Number**
Did not complete high school	0.0%	0
High School Grad/GED	13.2%	24
2-Year College Degree	10.4%	19
4-Year College Degree	38.5%	70
Masters Degree	26.4%	48
Doctoral Degree	4.4%	8
Professional Degree (MD, JD, DDS, etc.)	7.1%	13
No answer	0.5%	1

Table 4.6. Reported Household Income

Answer Options	**Percent**	**Number**
$40,000 – $59,000	18.6%	31
$60,000 – $79,000	19.2%	32
$80,000 – $99,000	12.6%	21
$100,000 -$199,000	39.5%	66
$200,000 - $499,000	10.2%	17
$500,0000 or more	0.0%	0
No answer	8.7%	16

Compared to the general Oregon and Portland metro county populations, residents living in Earth Advantage certified homes have completed more years of education. As education levels commonly correlate with income, the survey respondents also reported a higher level of income.

For example, in Multnomah County, approximately 31% of the population had a bachelor's degree or higher degree in the year 2000 (U.S. Census Bureau State and County Quick Facts). By contrast, 70% of the Earth Advantage survey respondents reported a bachelor's, master's, doctoral degree, or other professional degree. The median family income for a 4-person household in Portland in 2008 was $67,500 (Portland Development Commission). Sixty-two percent of the survey respondents reported household income of $80,000 or more.

Table 4.7 Certified Home Residents Compared to General Population

	Portland General Population	Earth Advantage Survey Respondents
Education – Bachelor degree or higher	31%	70%
Income	$67,500	$80,000

Portland general income based on median family income for a four person household. Earth Advantage survey respondents reported their household income.

While a demographic overview alone does not determine future market trends, it is useful to review how certified homes are distributed across the metro area and the typical profile of residents living in a sustainably certified home. From a policy perspective, this information may be useful to as a way to identify effective strategies for promoting public outreach messages regarding energy efficiency and sustainable home choices. This demographic information is also of interest to builders, developers, and realtors.

Residents of Self-Certified Homes

Olympia Master Builders received 32 survey responses. Of these, 28 responses were from residents with self-certified homes. All of the surveys received by the Master Builders Association of Pierce County were from self-certified homes. This section provides an overview of their responses. Their answers largely mirrored those given by residents of third-party certified homes, with some exceptions. For example, 68% of these respondents ranked energy efficiency as either a 4 or 5 on a five-point scale, suggesting that it is very or extremely important.

While residents in third-party certified and self-certified homes responded to the survey in a similar manner, a few differences were found. A greater number of residents in the third-party certified homes reported that their utility costs were lower in their current than in their previous home (46% versus 56%). Also, more residents in self-certified homes reported that sustainable certification was less of an influencing factor in their decisions to buy homes. This may be rationalized by the fact that they had not decided to pursue certification until after they have moved into their homes or, in the case of an existing certification, it may not have been highlighted as a selling point.

Finally, residents were asked if they thought that sustainable certification would have a positive impact on the future sales prices of their homes (Table 4.9). A number of respondents commented that the future value of their properties would depend on the market.

Table 4.8. Important issues among residents of self-certified homes

Attribute	**Ranking**	
Energy Efficiency	(5) Extremely important	42.6%
	(4)	26.2%
	(3)	18.0%
	(2)	1.6%
	(1) Not important	9.8%
Indoor Air Quality	(5) Extremely important	32.8%
	(4)	24.6%
	(3)	31.1%
	(2)	8.2%
	(1) Not important	1.1%
Lower Utility Costs	Lower	45.9%
	Higher	14.8%
	The Same	18.0%
	Don't Know	23.0%

Table 4.9 Consumer Purchase Decision

Question: Did sustainable certification have any influence on your decision to buy your home?	**Response**
Yes	31%
No	61%
no answer	7%

Note: Percentages may not add up to 100 due to rounding.

A few thoughtful residents went on to comment on the need for increased education for consumers and residential appraisers.

> "The impact will grow as the Real Estate agents and consumers are educated."
> "We built our home so if we ever decide to sell, we believe that the market for green homes, especially ones with certification, would be strong."
> "It's all in the market, what are people willing to pay at the time."
> "Not immediately, perhaps in five years. Some realtors, don't even know or care yet."
> "Our home will sell due to its appeal, location, and affordability, less the 'green clause'."

These comments reflect opinions stated in valuation and real estate literature on the topic. Green certification programs and the adoption of sustainable building practices will continue to grow, but within the field of real estate valuation, assessing the impact of sustainable certification remains an undeveloped science.

VII. Builder Interviews and Surveys

Home builders are clearly an important part of the valuation puzzle. The viability of their green business models depends on public knowledge regarding sustainable homes and public demand for those homes. Lenders and residential appraisers need to understand their products in order to provide financing and accurate value estimates. Builder input is included in this study as a means to identify trends in both industry and public perceptions regarding residential green building. Builders were asked about their motivations for building certified homes, the cost implications of certification, and general market demand.

The GBVI Steering Committee authorized one-on-one interviews and online surveys with residential builders who have constructed certified homes. Ten in-person builder interviews were conducted with senior staff of companies enrolled as Earth Advantage builders in April and May 2008. An additional 35 builders answered the same questions using an online survey conducted by the Master Builders of Pierce County and Earth Advantage Institute

The companies where the individual builders work are listed in Table 5.1.

Table 5.1 Earth Advantage Builder Interviews

Arbor Homes
Ben Walsh
CoHo Construction
Craftsman Homes
Legend Homes
New Traditions
Palmer Homes
Solaire Homes
Sun Forest Homes
Woodhill Homes

Company motivation: Builders reported a number of different reasons for offering certified homes. Primary answers involved extending or demonstrating a commitment to quality and the means to differentiate their companies from the competition. Other builders voiced their personal beliefs in the need for increased societal efforts to reduce climate change.

As a group, the builders stated that in order to remain a leader in a competitive environment, they needed to be abreast of green building technologies and techniques. One manager remarked,

> "All builders now need to be in the running (and need to offer sustainable products). The cost of energy is one the largest things on the mind of customers. Sustainable features are also of a growing interest in this market."

Consumer awareness and demand: Builders uniformly agreed that there is an appreciably higher level of awareness among their customers on issues related to sustainability. According to one builder, awareness has increased over the past 5 years. However, this increased awareness does not necessarily translate into greater demand for sustainably certified new homes. The builders generally commented that consumer demand was not the primary reason for offering an Earth Advantage certified home at this time.

Table 5.2 Role of Consumer Demand

Did direct consumer demand influence your decision to introduce green products into your homes?	
yes (9)	26%
No (25)	71%
No answer (1)	3%

n=35

Interviewees mentioned that they receive more questions about energy efficiency and sustainability in general and that consumers may ask about sustainable certification. Certification has become more important but remains one factor among several considered, most notably location and price.

Consumer demand for green homes increased nationally according to a survey released by Green Builder Media. Green Builder Media surveyed 250 residential builders across the U.S. and reported that more than half had stated that they saw not only an increase in demand for green homes but a willingness to pay more. According to this source, builders have reported a willingness of homebuyers to pay between 11% and 25% more for green-built homes (US Newswire, 2007). According to this source, the "average green homebuyer is between the ages of 35 to50 with a college degree and fair understanding of green products."

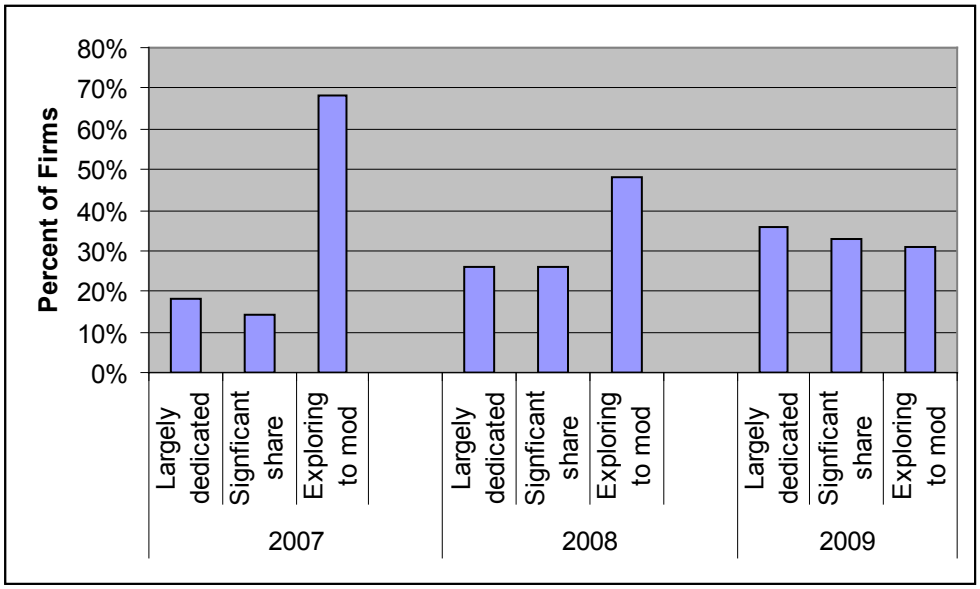
Some reduction in new residential construction began to take place in the later part of 2007. It should be noted that the significant slowdown in new housing and other challenges to the national economy occurred between spring 2008, when the builder interviews were conducted, and the time when this draft was written. Changes in consumer credit availability and a national decline in new residential construction experienced during the latter half of 2008 are not directly reflected in the responses given by the individual homebuilders. However, several home builders working with Earth Advantage Institute have credited their decisions to provide sustainably certified, high-quality products as a response to the down economy. According to McGraw Hill Construction's "The Green Builder SmartMarket Report" (2008), 40% of builders report a marketing advantage from green homes in today's housing slump.

Despite the recession in the U.S. economy, builders anticipate increased participation in sustainable residential projects in 2009. Table 5.3 shows the degree to which builders have and will be involved in sustainable building on a national level. The percent reporting that they would be "largely to fully dedicated" to green building (i.e., more than 60% of their projects) will grow from 18% in 2007 to an anticipated 36% in 2009.

Building professionals are positively responding to the market growth surrounding energy efficiency and green building. According to a survey conducted by the National Association of Home Builders (NAHB), "there has been a 20% increase since last year [2005] in builders dedicated to green building issues. The number was expected to rise by another 30 percent in 2007 to 64% of builders either heavily or moderately involved in green building projects." The survey also found that "nine out of ten builders say they are incorporating energy-saving products into new homes at all price levels" and "the leading factors triggering building firms to expand their green home building activities were: consumer demand, 88%; superior performance, 87%; competitive advantage, 83%."

Building professionals recognize the value of energy efficient and green building construction, features, and benefits. More builders are offering sustainable product as a way to differentiate themselves in the market. The Home Builders Association of Metro Portland joined a dozen other HBAs in adopting Earth Advantage as their preferred green building provider of choice. As market conditions shifted in the 2nd half of 2008, market differentiation become more important. The number of firms that provide green building projects grew from 2007 to 2009, according to McGraw Hill (see Table 5.3). describe themselves as providing sustainable building projects to their clients has grown dedicating projects

Table 5.3 Construction Firms Dedicated to Sustainable Building Projects



Source: McGraw Hill Construction Green Outlook 2009

Need for more consumer education: In their comments, home builders pointed to a separation between growing consumer awareness of general sustainability issues and market demand for certified residential properties. The home buying public may not understand the many elements that are needed to construct a home that will meet third-party certification requirements. According to one builder,

> If you know what we know about the quality and the added work that goes into a home to make it Earth Advantage certified, then absolutely, you understand the value. However,

most buyers don't know about the certification process or what goes in to building a home. There is a need to educate the buyer.

Another builder added that there was definitely an increase in the overall value of his company's homes, but that that value did not automatically translate into a higher price. "It doesn't follow that if we spend an extra $2,000 for a given item that we will automatically mark up the price by $2,000." The market may not know how to account for this increase in value. Additionally, a builder may choose not to directly change a price in order to maintain market competitiveness.

Cost implications: Popular perceptions linking sustainable construction with higher construction costs have been common (McCuen, 2007). Builders were asked to comment on the cost implications for building homes to meet sustainable certifications. Among those responding to the survey, 74% answered positively to the question, *Do you believe that building sustainably certified homes adds significant initial cost to you as a builder?* The survey then included a follow-up question to determine what the home builders had experienced in any additional costs. The greatest single answer was provided by twenty-nine percent of the respondents; they estimated that the added cost to the construction budget was between 5% and 10%. (See Table 5.4.)

Table 5.4 Cost of sustainable certification

Do you believe that building sustainably certified homes adds significant initial costs to you as a builder? (n=35)			
	Yes	26	74%
	No	8	23%
	No answer	1	3%
If yes, what is the additional cost that is added to the construction budget?			
	a. up to 5%	7	20%
	b. between 5 and 10%	10	29%
	c. between 10 and 20%	5	14%
	d. other	0	0%
	e. depends on home	8	23%
	f. not sure	1	3%
	No answer given	4	11%

Note: Above does not include the 10 in-person interviews

Importantly, builders who participated in one-on-one interviews stated the added cost has gone down over the past 5 years because more applicable products have become available, the economies of scale yielded benefits, and market demand for their homes has grown. Eight out of 10 individual builders who were interviewed reported that their costs had decreased over the last several years. Two builders attributed this cost decrease to their own increased level of experience and said that the growing experience of their contractors had helped to decrease their costs.

In the 2007 summary report by the World Business Council for Sustainable Development, 1,423 professionals were interviewed between November 2006 and February 2007. The results indicate that nationally, people perceive green buildings to be more expensive than they are.

While the majority of builders acknowledged additional costs, they also agreed that the costs associated with sustainable residential construction have decreased over the past several years. Twenty nine percent responded that costs had become much more competitive and an equal number stated that the costs had decreased by a small amount.

Table 5.5 Costs decreases

Has the additional cost of building a sustainably certified home decreased over time? (n=35)	
Yes, now cost neutral	0
yes, it has become much more price competitive	29%
yes, the costs have decreased by a small amount	29%
no, the costs have not changed	31%
no answer given	11%

Market value: Of the builders who contributed to this study, 98% agreed that sustainable certification adds to the market value of residential properties. The builders equate certification efforts with a high-quality end product, superior construction, increased energy efficiency, and positive health impacts for home residents. Additional discussion followed regarding how market value is determined. Several builders commented that the increased value of their homes is not adequately rewarded by the market.

One builder replied, "Yes, there is added value to a home (in achieving certification), but we don't just adjust the price. So it can be difficult to measure the value exactly. We are selling at cost right now in order to be competitive." Most residential appraisers simply may not know how to assign a dollar value to specific sustainable features in a home, such as high efficiency furnaces or improved duct sealing. Additionally, standard residential appraisal documents do not include an area where this information may be recorded.

Builders responded to the question, *Do your sustainably certified homes command a higher market value? If yes, by what percentage?* Builders were almost evenly split in their responses. They believed that the certified homes that they had built were more valuable. But they also stated that the market would not fully recognize that value.

> "In my opinion the answer… is yes, but if you're asking whether or not the home will sell for a higher price to prospective buyers, no, not in this market."

"(Our homes are) More likely to be purchased over similarly priced competition. As to being able to price them higher, the answer would be no additional value."

"We may be able to sell our homes for perhaps as much as 10 - 15% more. However, location is still the primary driver for home buyers...and green certification cannot offset a less desirable location."

Valuation challenges: A primary issue involved in the valuation of certified homes is the difficulty involved in finding suitable comparable homes. This was clearly demonstrated by the research conducted on property comparisons. This difficulty stems in large part from the lack of objective data and a common language for the description of sustainable features. Builders answering the online survey from Earth Advantage unanimously agreed that this is a primary issue. The majority of builders responded that current appraisal practices do not recognize the value of green features incorporated into a certified home (Table 5.6).

Table 5.6 Current Appraisal Practices

"Current appraisal practices do not recognize the value of green features incorporated into a certified home." Do you agree with this statement? (n=20)	
Yes	80%
No	5%
not sure	15%

NOTE: This question was not included on the electronic survey conducted by Pierce Co.

Public Incentives: The builder survey included questions regarding public incentives and utility rebates to support higher energy efficiency in new residential construction projects. Builders were asked if they were aware of these programs and if they had taken advantage of them. Most of the builders had taken advantage of utility rebates. A smaller number had utilized state or federal tax incentives.

Table 5.7 Builder Awareness of Public Incentives

Are you aware of rebates offered by some utility companies for higher efficiency furnaces/heat pumps/appliances? N=35	
Yes	91%
No	9%

Have you take advantage of any utility rebate programs to install higher efficiency equipment in a home that you have built? N=35	
Yes	57%
No	34%
no answer	9%

Have you taken advantage of state or federal tax incentives to support the construction of any of your residential projects? N=10	
Yes	30%
No	70%

Did tax incentives influence your decision to increase the energy efficiency of your homes? N=25	
Yes	72%
No	24%
no answer	4%

Builders generally acknowledged the important role that these kinds of programs can play in raising public awareness and providing support to individual homeowners. This was particularly true of programs offered by Energy Trust of Oregon. Seventy two percent (72%) of the builders surveyed reported that tax incentives had influenced their decision to increase the energy efficiency levels of their home products.

The downturn in new home construction that began in 2007 and that has continued into 2009, has certainly had an impact on all home builders, including those who construct certified homes. The housing market contracted further in 2008 in the months that followed the interviews and surveys described above. Sustainable or green homes have been reported to provide some amount of market protection for home builders. McGraw Hill Construction reports that green homes have not been as adversely impacted as standard construction homes. “In the context of today’s down economy, green homes offer an opportunity for market differentiation for builders as well as cost savings and health benefits for consumers” (McGraw Hill, 2008). According to McGraw Hill’s research on U.S. construction trends, “the green home market is expanding despite the downward trends of the market as a whole” (McGraw Hill, 2008).

VIII. Western Washington Marketing Analysis

In March 2009, the Master Builders Association of King and Snohomish Counties selected Hamilton Investments, LLC to study the relationship between the marketing comments included by real estate brokers on the Northwest Multiple Listing Service when selling a certified home and the sales price achieved for the home. The study includes Built Green, LEED for Homes and ENERGY STAR homes as certified homes. The study makes an important contribution to this report as it reinforces the important role that real estate brokers play in educating their buyers and the added value that results from this consumer understanding.

The following excerpt is from the report abstract:

(Hamilton's report) quantifies the effects of marketing and the acknowledgement in marketing materials of environmental certifications and sustainable features on sales prices of homes in a five-county western Washington region. The counties included in this study are: King (excluding Seattle), Pierce, Kitsap, Snohomish and Thurston. Homes are broken down into two major categories: marketed and unmarketed homes. These two categories are then analyzed by geography, certification type, and listing offices. The certifications used are Built Green®[4], LEED for Homes and ENERGY STAR. The listing offices included in this study are Windermere and John L. Scott. Major findings of this study include:

- Throughout the five-county region, certified homes that were marketed as green achieved an average sales price of $534,000 and homes that were not marketed achieved an average sales price of $458,000. In all of the homes analyzed, a roughly 14 percent premium is associated with the marketing of green features. This study includes 1,470 certified homes sold between 2007 and April, 2009, and built between the years 2005 and 2009.

- All counties show some sort of premium for marketed homes, presenting strong evidence that marketing green features and certifications has a positive effect on home prices.

- Thurston County received the highest premium, with marketed certified homes achieving an average price that was 25% higher than homes that were not marketed through the Northwest Multiple Listing Service.

- The county with the highest percentage of homes to receive marketing attention was Kitsap County, with 45 of 117 certified homes marketed. King County followed with 29% or 165 of all certified homes marketed as green. Thurston and Snohomish counties recorded the fewest percentage of homes marketed, at 16%.

- The Built Green® certification is the most referenced certification among marketing comments in the Northwest Multiple Listing Service, with 145 total listings referencing Built Green within their marketing remarks.

[4] Built Green® is a registered trademark of the Home Builders Association of Metro Denver, Colorado, used by the Washington State Built Green programs with permission.

- Both Windermere and John L. Scott are Northwest residential real estate brokerages. Together they make up the majority market share of environmentally certified home sales in the five-county region. Of this study's 1,470 certified homes sold between 2007 and April, 2009, fifty two percent of those homes were listed by either Windermere or John L. Scott.

- Of the 766 certified homes listed by both Windermere and John L. Scott, 207 of these homes were marketed as green. John L. Scott marketed 75 homes and Windermere marketed 132 homes.

- The average price for all certified homes listed by Windermere was $541,783, whereas certified homes listed by John L. Scott sold for an average of $495,746. This discrepancy reinforces findings throughout the study that certified homes marketed as green will achieve higher premiums than certified homes which are not marketed as green.

Conclusions drawn from this study point to the positive effects on pricing of environmentally certified homes when marketing includes descriptions of sustainable features and of the specific program used to certify the home. While this study presents a very strong case for the relevance of the findings, it in no way questions the decisions of individual real estate agents in marketing their clients' product. The premiums shown amongst marketed product are only statistically significant in that they show a positive trend amongst many data sets. While some statistical tests were conducted, such as scatter diagrams and simple t-tests, specific metrics associated with marketing cannot be measured with high levels of specificity due to the many variables affecting real estate prices.

One conclusion that can be drawn from this study is that evidence points to consumers paying more for cost-saving and environmentally friendly home systems. Marketing these homes is a good way for a real estate brokerage firm to raise overall revenues as well as to educate consumers and other agents about the sustainable features of a certified home.

For more information regarding this report, please contact Aaron Adelstein, executive director of the Master Builders Association of King and Snohomish Counties, or Sterling Hamilton of Hamilton Investments, LLC.

IX. Conclusions and Recommended Next Steps

Residential appraisers, real estate brokers, and financial institutions will benefit from a greater understanding of sustainable home construction and home value by improving their ability to work with third-party certified buildings. Increased professional training and understanding of sustainable home practices will lead to more accurate value assessments of sustainable homes.

Home builders who participated in this study also emphasized the need for greater consumer understanding of what is involved in sustainable home construction and its benefits. As reported by Hamilton in section VIII, consumer familiarity with sustainable home features has a direct positive relationship with the sales price of third-party certified homes. Public outreach of this kind aligns with the marketing goals of the builders, but the promotion of their construction methodologies has a larger goal as well. Sustainable construction has a societal benefit in terms of reduced resource consumption and greenhouse gas reduction. Consumers will benefit from a greater understanding of the impacts that their homes collectively have on the environment and the economy.

Home valuations need to report on aspects of home construction that are tangible but potentially harder to quantify, such as the quality of durable materials and health benefits associated with improved indoor air quality. These long-term performance benefits can be measured, although they typically are not factored in to a home valuation.

Residential builders and sustainable building advocates must continue their dialog with appraisers, real estate professionals, and relevant financial institutions in order to facilitate this improved knowledge transfer. The importance of this dialog was underscored in a publication by Better Bricks, a program of the Northwest Energy Efficiency Alliance.

> Thus, investors, developers, and owners will be better served by engaging more directly with lenders and appraisers, detailing how your approaches to energy management present a more compelling investment opportunity. A clear explanation of key strategies, innovative or non-traditional techniques - and the reason for their incorporation - will facilitate a better assessment, increasing the potential for increased assessed value. (Better Bricks, 2007)

Conversations among builders and the professional groups mentioned earlier are ongoing. Additional training opportunities by organizations such as the American Appraisal Institute on the value and requirements for accurate assessments of sustainable residential properties, are clearly helpful and are beginning to occur. The Vancouver Valuation Accord resulted in a number of goals, including the support of valuation organizations in developing education courses and providing training to appraisal organizations (Bergsman, 2007). Green building organizations in the Pacific Northwest will continue their efforts to meet some of the same education and outreach goals, including real estate and appraiser professional training.

Recommended Actions

This study points to a number of specific recommendations to improve understanding related to the valuation of sustainable homes, including professional development and general public outreach. The proper venue for these actions will vary as will the source of needed resources.

1) Increase Tracking of Third-Party Sustainable Certified Properties

The property comparable work completed in this study only became possible in 2007 when the Portland RMLS and the NWMLS began to track the sale of sustainable homes. Other multiple listing services in the region also provide real estate brokers with the opportunity to track the certification of sustainable homes and/or significant sustainable features. The number of multiple listing services that provide this option should be expanded.

- Meet with other multiple listing service providers to determine if they would be able to provide a forum for information about third-party certified sustainable homes on their Web-based portals.

- Discuss with multiple listing service providers if they would be able to provide training to real estate brokers regarding the different sustainable certification listings. This training would also provide hands-on instruction in the input of information onto the Web-based tool.

2) Conduct Property Comparable Work in Other Areas

As other multiple listing service agencies begin to provide the platform for tracking the sales of homes that have received third-party sustainable certifications, additional property comparison work should be undertaken. Central Oregon MLS and Willamette Valley MLS, for example, have information about certified homes. If sales information can not be tracked by a multiple listing service, realtor associations may be able to to contribute sales data results.

3) Develop and Support Professional Training Opportunities

Following the Vancouver Valuation Accord, the American Appraisal Institute established a training seminar for real estate appraisers and other professionals. Earth Advantage Institute also plans to offer a training course for appraisers in 2009.

4) Work with Homebuilder and Professional Realtor Associations to Increase Consumer Knowledge about Sustainable Homes

Built Green Washington, Cascadia USGBC, Earth Advantage Institute, different Master Builder Associations, Home Builder groups and others, regularly work with professional home builder and real estate associations. These partnerships should be continued and used as an opportunity for increased and coordinated public outreach regarding the connection between sustainable certification and home value. Articles in on-line and printed newsletters, conference presentations and continuing education opportunities each play a role. A concentrated, short-term

outreach campaign would also result in increased general pubic understanding of these complex issues.

5) Develop Additional Educational Tools

Expand Green Building Valuation on-line resources available through GBVI member organizations. When GBVI first began, an on-line library was established through Cascadia USGBC for member organizations. Existing GBVI member websites and other resources include:

American Appraisal Institute:
http://www.appraisalinstitute.org/

Cascadia Regional Green Building Council:
http://www.cascadiagbc.org

Built Green Washington:
http://www.builtgreenwashington.org/page.php?id=3

Earth Advantage Institute:
http://www.earthadvantage.org

Green Works Realty:
http://greenworksrealty.com/e-cert_report/e-cert_report.php?t=e-cert_report

Lighthouse Sustainability Centre:
http://www.sustainablebuildingcentre.com/

Master Builders Association of Pierce County: http://www.mbapierce.com/page.php?id=1

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Relevant Studies with Emphasis on Commercial Properties

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Matthiessen, Lisa Fay and Peter Morris. "Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption" Davis Langdon. July 2007.

Miller, Norm, Jay Spivey and Andy Florance. "Does Green Pay Off?" Commercial property report. Nov. 19, 2007.

EXHIBIT F

Evidence of Rational Market Valuations for Home Energy Efficiency, by Rick Nevin and Gregory Watson, October 1998

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The
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Evidence of Rational Market Valuations for Home Energy Efficiency

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Evidence of Rational Market Valuations for Home Energy Efficiency

According to this study, residential real estate markets assign to energy-efficient homes an incremental value that reflects the discounted value of annual fuel savings. The capitalization rate used by homeowners was expected to be 4%–10%, reflecting the range of after-tax mortgage interest rates during the 1990s and resulting in an incremental home value of $10 to around $25 for every $1 reduction in annual fuel bills. Regression analysis of American Housing Survey data confirms this hypothesis for national and metropolitan area samples, attached and detached housing, and detached housing subsamples using a specific fuel type as the main heating fuel.

Investments in high-efficiency heating and air conditioning equipment, insulation, and other energy-efficient home features have historically been justified and promoted based on the investment payback to the homeowner. The payback period is the number of years needed to fully recover energy efficiency investments through reduced fuel costs. More recently, the U.S. Environmental Protection Agency initiated a marketing program called "ENERGY STAR Homes." This effort teaches that energy-efficient homes produce immediate positive cash flow for home buyers because the reduction in monthly fuel bills more than offsets the higher monthly mortgage payment needed to finance such investments. Some home buyers, however, still hesitate to invest in energy efficiency because they are uncertain that they would stay in their homes long enough to recover their investment through lower fuel bills and that they could recover an investment in energy efficiency when they sell their homes. Standard underwriting criteria for home mortgages can also increase the down payment requirements or mortgage insurance

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costs on these homes because energy efficiency investments raise the upfront price of a new home. Underwriting criteria may even prevent home buyers from qualifying for mortgages if the appraised value of the home does not fully reflect the value of energy efficiency investments. Home appraisals may not always reflect the cost of energy efficiency investments because research has never clearly demonstrated or quantified the relationship between energy efficiency and market value.

Underwriting criteria may prevent home buyers from qualifying for mortgages if the appraised value of the home does not fully reflect the value of energy efficiency investments.

ENERGY-EFFICIENT HOMES AND STANDARD MORTGAGE UNDERWRITING CRITERIA

Even if energy-efficient home investments pay for themselves in energy savings, the cost of such investments can adversely affect the qualifying ratios for a home mortgage, including the front-end and back-end income ratios and the loan-to-value ratio. The front-end ratio (or housing-cost-to-income ratio) is monthly housing expenses (principal, interest, taxes, and insurance, or PITI) divided by gross monthly income. The back-end ratio (or total debt-to-income ratio) is total monthly obligations (including auto loans, for example) divided by gross monthly income. The loan-to-value ratio is the amount of the mortgage divided by the lower of the appraised value or price of the home.

Standard underwriting criteria for 30-year, fixed-rate mortgages include a 28% constraint for the front-end ratio and a 36% constraint for the back-end ratio. Neither of these standard criteria account for utility costs as part of monthly housing expenses (PITI) or total monthly obligations. Therefore, the cost of energy-efficient upgrades for a new home can increase the home buyer's monthly PITI or total obligations beyond the qualifying constraints, even when the savings in monthly fuel bills more than offsets the higher mortgage interest. This income ratio anomaly was substantially addressed when the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) responded to the energy crises of the 1970s by establishing energy-efficient mortgage (EEM) guidelines that allow for a "2% stretch" over normal income ratio criteria for energy-efficient home mortgages.[1] The 2% stretch means that the front-end ratio for an EEM is raised to 30%, and the constraint for the back-end ratio is raised to 38%. For a household earning $60,000 per year, the 2% stretch can accommodate up to about $100 per month for higher mortgage payments related to cost-effective energy efficiency upgrades.

The 2% stretch gives lenders more flexibility with income ratios for energy-efficient homes but does not allow any flexibility with the loan-to-value ratio. Home buyers generally must pay for mortgage insurance to qualify for a 30-year fixed-rate mortgage with a loan-to-value above 80%. They also pay higher rates for mortgage insurance if their loan-to-value exceeds 90%, and often cannot qualify for the mortgage if their loan-to-value exceeds 95%. For a typical $160,000 house, an 80% loan-to-value loan requires 20% down, or $32,000, resulting in a mortgage loan amount of $128,000. If $5,000 of energy-efficient upgrades are included in the purchase of the home, the price increases to $165,000, and a higher down payment is needed to maintain the same loan-to-value ratio. At best, if the appraised value for the home is $165,000, the home buyer must add $1,000 to the down payment to maintain an 80% loan-to-value. At worst, if the appraiser does not recognize any additional value for energy efficiency and estimates the appraised value at $160,000, then the home buyer must add the entire $5,000 to the down payment in order to maintain the 80% loan-to-value.

The Federal Housing Administration (FHA) offers an EEM that allows the incremental cost of energy-efficient, cost-effective upgrades to be added directly to the mortgage, as long as these additional costs do not exceed the greater of $4,000 or 5% of the property's value (not to exceed $8,000). The FHA EEM is designed so that someone who qualifies to buy a home without energy efficiency investments would also qualify for the FHA EEM without any increase in the required down payment. The FHA EEM defines "cost effective" to include energy efficiency investments with a total cost that is less than the present value of the energy saved over the useful life of the investment.

1. William Prindle, "Energy-Efficient Mortgages: Proposal for a Uniform Program," 1990 Summer Study on Energy Efficiency in Buildings, American Council for an Energy-Efficient Economy, Washington, D.C., August 1990, 7.155.

This EEM, however, is subject to the FHA maximum single-family mortgage limits, which can be as low as $86,317 and go up to $170,362.

Fannie Mae and Freddie Mac are currently engaged in pilot programs that allow the incremental cost of energy-efficient, cost-effective upgrades to be added to the appraised value of a home. Under these programs, the home buyer must provide only the additional down payment associated with the increase in appraised value in order to maintain the same loan-to-value ratio (e.g., an additional $1,000 down with a $5,000 upgrade to maintain an 80% loan-to-value). The Fannie Mae and Freddie Mac EEMs would provide substantial relief from loan-to-value constraints on energy-efficient homes that exceed FHA limits, but these programs are not generally available outside the pilot program areas at this time.

Review of Literature on Market Valuation of Energy-Efficient Homes

Seven studies provide some insight into the relationship between residential housing values and energy costs (see table 1). Six of these studies were published between 1981 and 1986, and the most recent study was published in 1990. The data for these studies were collected over a time period of considerable variation in fuel prices and mortgage interest rates. The first four studies are also not directly comparable because some drew relationships between home value and fuel type, while others linked home value to specific energy efficiency characteristics (e.g., the amount of insulation).

The research results are qualified by sample size limitations, narrow regional or local data sets, and/or the absence of data on key regression variables affecting residential housing values. It is significant, however,

TABLE 1 Published Research on Market Value of Energy-Efficient Homes

Study	Sample Size	Time Period	Key Findings
a	269	1970–1975	The 1974 spike in relative cost of fuel oil raised price differential between gas- and oil-heated houses to $761 in 1974, and up to $4,597 in first half of 1975.
b	100	1978–1979	Value of energy-efficient homes (with lower structural heat loss) was $3,248 higher than inefficient homes.
c	81	1980	Home value increased by $2,510 for each one-point decrease in thermal integrity factor.
d	505	1971–1978	A one-inch increase in wall insulation increased home value by $1.90 per square foot; a one-inch increase in ceiling insulation increased home value by $3.37 per square foot; high-quality (energy-efficient) windows increased home value by $1.63 per square foot.
e	1,317	1978	Home value increased by about $20.73 for every $1 decrease in annual fuel bills.
f	234	1982	Home value increased by $11.63 per $1 decrease in fuel expenditures needed to maintain house at 65° F in average heating season.
g	67	1983-1985	Home value increased by about $12.52 per $1 decrease in electric bills, consistent with home buyers discounting savings at after-tax mortgage interest rate.

a Robert Halvorsen and Henry O. Pollakowski, "The Effects of Fuel Prices on House Prices," *Urban Studies,* v. 18, no. 2 (1981): 205–211.

b John B. Corgel, Paul R. Geobel, and Charles E. Wade, "Measuring Energy Efficiency for Selection and Adjustment of Comparable Sales," *The Appraisal Journal* (January 1982): 71–78.

c Joseph Laquatra, "Housing Market Capitalization of Thermal Integrity," *Energy Economics* (July 1986): 134–138.

d Molly Longstreth, "Impact of Consumers' Personal Characteristics on Hedonic Prices of Energy-Conserving Durable Good Investments," *Energy,* v. 11, no. 9 (1986): 893–905.

e Ruth C. Johnson and David L. Kaserman, "Housing Market Capitalization of Energy-Saving Durable Good Investments," *Economic Inquiry* (July 1983): 374–386.

f Terry M. Dinan and John A. Miranowski, "Estimating the Implicit Price of Energy Efficiency Improvements in the Residential Housing Market: A Hedonic Approach," *Journal of Urban Economics,* v. 25, no. 1 (1989): 52–67.

g Marvin J. Horowitz and Hossein Haeri, "Economic Efficiency v. Energy Efficiency," *Energy Economics* (April 1990): 122–131.

Although home buyers are not likely to make present-value calculations or fuel bills, they will look at average fuel bills and energy efficiency features before buying a home.

that all seven studies report higher home values associated with energy efficiency. Comparable results shown for the last three studies suggest that home value increases by $11–$21 for every dollar reduction in annual fuel expenditures. The last study also suggests consistent criteria that could be used in home appraisals to quantify the increase in market value associated with energy efficiency. Specifically, the higher market value associated with energy efficiency in this study appears to reflect projected fuel savings discounted at the home buyer's after-tax mortgage interest rate.

Rational Market Hypothesis

The hypothesis presented here is that rational home buyers should bid more for energy-efficient homes as long as the incremental cost of the energy-efficient home does not exceed the present value of its expected fuel savings. Further, the discount rate used to determine the present value of expected fuel savings should be the home buyer's after-tax mortgage interest rate.

Throughout the 1990s, the interest rate on 30-year fixed-rate mortgages has ranged from just under 7% to just over 9%. A home buyer paying a 7% mortgage rate and using the mortgage interest deduction in the top marginal income tax bracket will pay an after-tax interest rate of approximately 4%. At the other extreme, home buyers with a 9% mortgage rate could pay a total financing cost of almost 10% if they pay an additional percentage rate for mortgage insurance and cannot benefit from the mortgage interest deduction (because their standard deduction exceeds their itemized deductions). Using the range of 4%–10% for after-tax interest rates, the hypothesis for the regression analysis can be stated as follows:

> *With after-tax interest rates between 4%-10% and stable fuel price expectations, home buyers should pay $10-$25 more for every dollar reduction in annual fuel bills resulting from energy efficiency.*

If home buyers expect stable fuel prices, then paying $10 for every $1 reduction in annual fuel bills is an energy efficiency investment having a 10% return, and paying $25 per $1 reduction in annual fuel bills yields a 4% return. Although home buyers are not likely to make present-value calculations on fuel bills, they are likely to look at average fuel bills before buying a home and obtain information about insulation and other energy efficiency features. Fuel costs may be considered just one of many complex factors affecting the decision to buy a home, but the same can be said about other determinants of home value—from number of bedrooms to the quality of local schools. In a rational, competitive market, the value of energy efficiency, like the value of any other housing characteristic, should reflect its marginal value to home buyers. If home buyers expect stable fuel prices, then the marginal value of energy efficiency in recent years should be $10–$25 for every dollar reduction in annual fuel bills.

Data

The rational market hypothesis was tested for energy-efficient home values using 1991, 1993, and 1995 American Housing Survey (AHS) national data, and for 1992 through 1996 metropolitan statistical area (MSA) data. The AHS is a unique data source for this research in that it includes both house characteristic data (home value, number of rooms, square feet, lot size, and other key housing characteristics) as well as utility expenditure data. These data are reported by homeowners in lengthy interviews with the Census Bureau. Although independent data measurement (e.g., actual sales prices for homes) is preferable to self-reported values, the AHS provides a relatively large sample to ease concerns about random reporting error. Further, the AHS includes Census Bureau weights indicating the universe of owner-occupied housing units represented by each sample unit.

A complete set of national AHS data is collected every two years, while the MSA data are collected on a staggered cycle. The national sample includes data on rural housing not included in the MSA data and non-MSA urbanized areas, but the MSA data provides larger sample sizes within each specified MSA. The MSA data also provides a completely separate set of survey respondents (i.e., there is no overlap with the national sample). The period 1992–1996 reflects a complete cycle of MSA surveys, with a few MSAs surveyed in both 1992 and 1996. The MSA analysis here examines each of these five years of data and a merged MSA sample, including the complete cycle of MSA surveys. In the case of the few MSAs surveyed in both 1992 and 1996, the merged sample includes only the 1996 data.

For each national and MSA sample, the analysis examined subsets of the weighted AHS data on owner-occupied housing in adequate condition reporting electricity, piped gas, or fuel oil as the main heating fuel. The 8% of housing units using wood and other fuel types were excluded from the analysis because they provided incomplete data on fuel expenditures. Rental units were excluded because survey data on property values and fuel expenditures for rental units are probably distorted by reporting errors. Units in "adequate condition" are defined by the Census Bureau as having none of a series of major flaws or some combination of moderate flaws that make the unit substandard in quality. Substandard units were excluded from the analysis. These include houses experiencing electricity and heating equipment failure, which could obviously lower total fuel bills. Even when units were classified as substandard for another reason, their low fuel bills were attributed to uncomfortable internal temperatures.

The AHS data were separated into detached housing and attached housing to account for differences in their valuation models and consumption patterns. The detached housing sample was large enough to permit the analysis of homes in each category of main heating fuel (electricity, piped gas, or fuel oil). This further segmentation was intended to reveal any variation by fuel type.

Model Specification

Table 2 lists the variables in the regression model for single-family detached home values in the national AHS sample. Beside each independent variable description is the expected sign of the coefficient; also, the range anticipated by the hypothesis for the total utility variable is shown.

Established indicators of home value. The model incorporates independent variables for lot size, unit square feet, age of unit, and number of rooms, plus dummy variables to indicate whether the unit has a porch (or deck, balcony, or patio), garage (or carport), and / or central air conditioning. The coefficients for lot size, unit square feet, and number of rooms are all expected to be positive because home buyers are expected to pay more for additional living space. The coefficients for porch, garage, and central air conditioning are also expected to be positive because home buyers are expected to pay more for these amenities. Finally, the coefficient for age is expected to be negative be-

TABLE 2 Variables in Regression Model for Detached Home Values

Variable	Variable Description	Expected Value
House Value	This is the owner's reported value of the house. It is not the purchase price, nor is it the assessment for tax purposes.	Dependent variable
Intercept	Constant/intercept.	
Lot	Lot size in square feet.	+
Age	Age of property in years.	–
UnitSf	Size of unit in square feet.	+
Rooms	Number of rooms.	+
Totutil	Sum of reported household expenditures on fuel oil, gas, and electricity, including the total consumption of these fuels (There is no way to distinguish how much electricity was used for heating and cooling as opposed to lighting and other electricity consumption.).	-10 to -25
Lot2-MM	Lot size square feet squared, in millions.	–
Unitsf2-K	Size of unit square feet squared, in thousands.	–
SFUtil-K	Unit square feet multiplied by total utility, in thousands. This is to account for more space requiring more utility consumption.	+
RMUtil	Number of rooms multiplied by total utility. This is to account for more rooms requiring more utility consumption.	+
Garage	Whether or not a garage or carport was present.	+
Porch	Whether or not a porch or deck was present.	+
AirCond	Whether or not the house had central air conditioning.	+
South	If unit is in the South.	
West	If unit is in the West.	
Midwst	If unit is in the Midwest.	
Urban	If unit is in an urbanized area but not inside the central city.	
Rural	If unit is in a rural area.	

cause home buyers are expected to pay less for older homes.

Second derivative variables. The model incorporates variables for the squared values of lot size and unit square feet. Negative coefficients are anticipated for these variables due to diminishing marginal values for additional space.

Total annual fuel expenditures. The rational market hypothesis anticipates a negative coefficient for total annual fuel expenditures. Further, the expected value for this coefficient is between -10 and -25, indicating that home values decreased by $10–$25 for every dollar increase in annual fuel bills.

Fuel interaction variables. Two independent variables are included in the model to account for the interactions between fuel costs and living space (measured by square feet and number of rooms). The room utility variable was constructed by multiplying the number of rooms in a house by its annual fuel bill, and the square feet utility variable was constructed by multiplying the housing unit's square feet by its annual fuel bill. The inclusion of these variables in the model is intended to isolate the effect of energy efficiency in the coefficient for total annual fuel expenditures. For houses with equal living space, home buyers are expected to pay more for homes with lower fuel bills, but the two interaction variables are included to control for larger homes that have higher utility bills because they have more interior space. The expectation of positive signs for these two fuel interaction variables is that the preference for more space is generally stronger than the preference for lower utility bills.

Location variables. The model incorporates two types of location dummy variables: one set identifies region (the omitted category is the Northeast) and the other set defines urban status (the omitted category is Central City). Both the region and urban status categories are as defined by the Census Bureau.

Attached housing model. The attached housing model is exactly the same as the detached housing model, except that the lot size and lot squared variables are not included in the attached housing model because a substantial majority of the attached housing units in the AHS do not report any values for lot size.

MSA model. The attached and detached housing models for the MSA data are the same as the national AHS model, except that the location variables are dummy variables for each specific MSA.

Regression Results for Relationship Between Fuel Expenditures and Home Values

Table 3 shows the total utility coefficients from each of 15 national AHS regressions examining detached homes, attached homes, and the subsets of detached homes reporting their main heating fuel as electric, piped gas, and fuel oil. The total utility coefficients from the 30 MSA regressions are shown in table 4. Table 5 provides the approximate sample sizes for each type of AHS sample and subsample examined in the analysis, and table 6 shows the approximate R^2 values for the regressions associated with each type of sample and

TABLE 3 Total Utility Coefficients in National AHS Home Value Regressions

	1995	1993	1991
Detached homes	-23.41***	-20.00***	-21.16***
Attached homes	-20.49	-12.34	-18.88
Detached electric homes	-16.42**	-31.43***	-28.55***
Detached piped gas homes	-28.94***	-22.48***	-36.25***
Detached fuel oil homes	-21.92***	-5.05	+6.04

***Significance > 99%; ** significance > 95%.

TABLE 4 Total Utility Coefficients in MSA Home Value Regressions

	1996	1995	1994	1993	1992	1992–1996
Detached homes	-9.92***	-22.44***	-30.89***	-10.40**	-26.38***	-17.68***
Attached homes	-20.69	-15.35	-35.65**	-25.85	16.50	-23.18***
Detached electric homes	-36.73***	-12.53*	-33.66***	-13.11	-20.64**	-28.60***
Detached piped gas homes	-6.79*	-26.65***	-27.65***	-24.43***	-33.97***	-20.29***
Detached fuel oil homes	-10.07	-30.44**	-20.07	12.31	6.61	-2.64

*** Significance > 99%, ** significance > 95%, * significance > 90%.

TABLE 5 Approximate Sample Sizes for AHS Regressions

	National	MSA	Merged MSA
Detached homes	16,000	10,000	46,000
Attached homes	800	600	3,000
Detached electric homes	3,600	2,000	9,000
Detached piped gas homes	10,000	7,000	32,000
Detached fuel oil homes	2,400	1,000	5,000

TABLE 6 Approximate R^2 Values for AHS Regressions

	National	MSA	Merged MSA
Detached homes	0.41	0.55	0.59
Attached homes	0.28	0.47	0.53
Detached electric homes	0.38	0.55	0.58
Detached piped gas homes	0.43	0.57	0.61
Detached fuel oil homes	0.40	0.48	0.50

subsample (exact sample sizes and R^2 values vary by year). Detailed regression results for the national AHS data and the MSA regressions are available from the authors.

Discussion of Results

Forty-five regressions were conducted. All *F* values exceed the 99% level of significance. In the larger sample size regressions, almost all of the coefficients have the expected signs, and most are significantly different from zero at the 99% level. The limitations of the AHS data are reflected in R^2 values for the national sample regressions of about 0.40. This is not surprising because the AHS does not provide data that quantifies neighborhood crime rates or public school rankings, which certainly affect home price variations across different neighborhoods. Also, the variable in the national sample regression for urban status (urban, rural, or central city) provides only a discrete indicator variable to reflect the extent to which real estate values tend to increase in a continuous fashion for housing units closer to the city center. The region variable is also a discrete indicator variable that does not capture the extent of home value variation associated with different metropolitan areas within a region. Despite these limitations on the model's specification, the relatively large sample size from the AHS results in estimated values and the standard errors for the fuel expenditure coefficients that provide strong support for the rational market hypothesis.

The results for the MSA regressions confirm the findings from the national sample regressions. The R^2 values for the MSA regressions are also higher than the R^2 values for the national sample, with an R^2 value as high as 0.61 for the merged MSA regression for detached homes with piped gas. The higher R^2 values for the MSA regressions suggest that the dummy variables for each MSA capture more of the "location" value in residential real estate than the combination of region and urban status variables in the national sample. The remaining unexplained variance in the MSA regressions almost certainly reflects the importance of other more complex location variables (local schools, crime, and length of work commute) that are known to affect home values but are not detailed in the AHS data.

Beyond showing that the total utility coefficient is significantly different from zero, the MSA and national AHS regressions are remarkably consistent with respect to the specific value assigned to the total utility coefficient. For both the MSA and national samples, the total utility coefficients for attached and detached homes are very similar, with an average value of about -20, indicating that home buyers during this period discounted their future fuel savings at after-tax mortgage interest rates of about 5%. The smaller samples show more variation, but about half of the 45 regressions have total utility coefficients within one standard error of -20, consistent with random error around a normal distribution mean of –20. These findings provide strong evidence that the market value of energy-efficient homes reflects projected fuel savings discounted at the average home buyer's after-tax mortgage interest rate.

Detached Home National Samples

All three of the larger national samples for detached homes show total utility coeffi-

Home buyers in the 1990s have recognized market value for energy efficiency based on annual fuel savings discounted at 5% after-tax mortgage interest rate.

cients between -20 and -24, at the upper end of the range of –10 to -25 anticipated by the rational market hypothesis. Further, standard errors for these fuel expenditure coefficients are between 3.0 and 3.4, indicating a high probability that the true value of this coefficient is not only greater than zero but specifically in the upper end of the range anticipated by the hypothesis. The smaller single-year MSA samples for detached homes show more variation, but all five of these samples show total utility coefficients within or just outside of the anticipated range of -10 to -25, with a coefficient of -18 for the larger merged MSA sample.

Attached Home National Samples

The statistical significance of the results for the attached home national samples and single-year MSA samples are limited by small sample sizes, but the values for their total fuel expenditure coefficients are completely consistent with the detached housing analysis. The value of this coefficient in the larger merged MSA sample is -23, with a standard error of 8.3. This consistency in the fuel expenditure coefficients for attached and detached housing contrasts with two significant differences between these two housing types. First, the attached housing model has no independent variable for lot size. Second, the coefficients for the unit square feet variables indicate that the incremental market value associated with more living space is higher for attached homes than for detached homes, consistent with the fact that attached housing is disproportionately located closer to central cities where real estate values are higher.

In spite of the significant differences between attached and detached housing markets, the rational market hypothesis anticipates little or no difference in the fuel expenditure coefficient because the discounted value associated with every dollar reduction in annual utility bills should not be affected by other housing characteristics. Therefore, the consistency of the fuel expenditure coefficients in the attached and detached housing regressions is entirely supportive of the hypothesis.

Electric-Heat Detached Home National Samples

Regression analyses for the subset of detached housing units that identify electricity as their main heating fuel show national sample coefficients for the fuel expenditure variable that range from -16 to -31, with standard errors between 6.4 and 7.4. The smaller single-year MSA samples result in more variation in the total fuel expenditure coefficients for these samples, but these values are all roughly consistent with the hypothesis. The value of this coefficient in the larger merged MSA sample is –28.6, with a standard error of 3.9. Almost all of the national and MSA regressions show total fuel expenditure coefficients for electric homes within one standard error of the upper end of the -10 to -25 range anticipated by the rational market hypothesis, consistent with the results for all detached housing analysis. These consistent results for the electric home subsamples suggests that the market value associated with lower fuel expenditures does not simply reflect a premium paid for homes with a fuel type that may be more economical than other heating fuels in certain regions.

Gas Heat Detached Home Samples

The regression analyses for homes that identify piped gas as their main heating fuel reinforce the conclusions suggested by the analysis of electric homes. In the national sample regressions, the fuel expenditure coefficients range from -22 to -36, with standard errors between 4.0 and 4.6. The 1991 coefficient is the only estimate that is more than one standard error above the range anticipated by the rational market hypothesis, possibly reflecting the preference for gas heat over fuel oil following the spike in fuel oil prices in 1990. A similar pattern appears in the single-year MSA regressions. The larger merged MSA sample shows a fuel expenditure coefficient of -20, with a standard error of just 2.5, consistent with the results for all detached housing. These results indicate that the incremental home value of $20 per dollar reduction in annual fuel expenditures is evident both within and across subsets of housing using different fuel types as their main heating fuel.

Fuel Oil Heat Detached Home National Samples

The regression results for detached homes with fuel oil heat reflect the relatively small size of this subsample and appear to be distorted by extreme fluctuations in fuel oil prices in the early 1990s. Detailed results for this subsample show that some coefficients are not significantly different from zero and/or do not have the expected signs, especially in the

regression analysis for the 1991 data. The 1995 coefficient for the fuel expenditure variable is -21, consistent with results for other fuel types, but the 1993 coefficient is -5, and the 1991 coefficient is +6. Also, the coefficient for unit square feet in the 1991 fuel oil regression is negative. Similar patterns are reflected in the MSA regressions, with positive values for the fuel expenditure coefficients in 1992 and 1993.

The anomalous results in the fuel oil regressions for the early 1990s almost certainly reflect the extreme spike in fuel oil prices following the invasion of Kuwait in the summer of 1990. AHS respondents in the 1991 survey were reporting annual fuel bills that reflected extraordinarily high fuel oil prices during the 1990–1991 winter. Further, the national AHS sample of detached homes reporting fuel oil as their main heating fuel declined by almost 30% between the 1991 and 1995 surveys, while the sample size for all detached homes declined by only 2% between these two samples. This finding suggests that a large percentage of homes with fuel oil heat were converted to gas or electric heat in the years following the 1990 spike in fuel oil prices. Homeowners with the most financial incentive for converting from fuel oil and those most likely to have the financial means to convert would tend to be upper-income households disproportionately concentrated in larger homes with higher property values. Because the 1991 survey was actually conducted from July 1991 through December 1991, a substantial number of households may have reported higher home values in 1991 based on fuel conversions that were already planned or underway. These same households, however, may have reported their main heating fuel and annual fuel expenditures based on the spike in fuel oil prices from the previous winter. These factors could have substantially distorted the regression results for this subsample in the early 1990s.

CONCLUSION

The 45 regressions collectively indicate a clear convergence for the value of home energy efficiency. Almost half of the fuel expenditure coefficients are within one standard error of –20. This suggests that home buyers in the 1990s have recognized market value for energy efficiency based on annual fuel savings discounted at a 5% after-tax mortgage interest rate. The major exception to these findings were the regressions for homes heated by fuel oil in the early 1990s. These outliers appear to reflect the sharp increase in fuel oil prices in 1990 and conversions to gas heat in subsequent years.

The convergence of the fuel expenditure coefficients around -20 is consistent with research findings that the selling price of homes increased by $20.73 for every $1 decrease in annual fuel bills.[2] Other research supports the underlying conclusion that energy efficiency increases home value by an amount that reflects annual fuel savings discounted at the prevailing after-tax mortgage interest rate.[3]

The implication for home buyers is that they can profit by investing in energy-efficient homes even if they do not know how long they might stay in their homes. If their reduction in monthly fuel bills exceeds the after-tax mortgage interest paid to finance energy efficiency investments, then they will enjoy positive cash flow for as long as they live in their homes and can also expect to recover their investment in energy efficiency when they sell their homes.

The implication for appraisers is that cost-effective energy efficiency investments *do* appear to be reflected in residential housing market values. Therefore, the appraised value of energy-efficient homes could understate their actual resale value if the comparables used in the appraisal do not reflect the value of a cost-effective energy efficiency investment.

2. Ruth C. Johnson and David L. Kaserman, "Housing Market Capitalization of Energy-Saving Durable Good Investments," *Economic Inquiry* (July 1983): 374–386.

3. Marvin J. Horowitz and Hossein Haeri, "Economic Efficiency v. Energy Efficiency," *Energy Economics* (April 1990): 122–131.