

Arizona Journal of Environmental Law & Policy
Fall, 2015
Erik Smith^{a1}

Copyright © 2015 Arizona Journal of Environmental Law & Policy; Erik Smith

***398 THE WHOLE HOME APPROACH: SPURRING HOME ENERGY EFFICIENCY THROUGH A RENEWABLE AND TRANSFERRABLE PROPERTY TAX INCENTIVE**

A green, energy efficient residence is ideal for many current and future homebuyers, as homeowners have become increasingly aware of their current environmental footprint¹ and the potential financial savings associated with an energy efficient home. Unfortunately, a green home can also be an expensive home. Alternative energy sources, along with energy efficient building materials and appliances, frequently cost more than the industry standard and their non-renewable energy counterparts, such as fossil fuels. This paper discusses the energy rating standards currently used, and then explores the idea of a transferable, long lasting property tax incentive for the homeowner based on the overall energy rating of a home by applying a standard such as the Home Energy Rating System (“HERS”) or LEED certification process as opposed to, or in addition to, the current and itemized deductions approach. Such an incentive may spur larger investments in older homes and support the government’s goal of reducing energy consumption and the homeowner’s goal of saving money.

***399 I. BACKGROUND AND INTRODUCTION**

America is a world leader in household electricity consumption.² In 2012, the average American utility customer consumed approximately 11,000 kilowatt hours of electricity.³ This equates to approximately \$1,400 dollars per year per household, or put differently, \$1.50 out of every 100 dollars of after tax money.⁴

American homebuilders, prompted by consumer demand, energy codes, and tax incentives, have begun to build more energy efficient homes. A recent “Residential Energy Consumption Survey” conducted by the U.S. Energy Information Administration shows that “U.S. homes built in the year 2000 and later consume only 2 [percent] more energy on average than homes built prior to 2000, despite being on average 30 [percent] larger.”⁵

The number of homeowners that can take advantage of these newer homes will continue to grow as people migrate to newer housing developments, and as older neighborhoods experience development revivals. These more energy efficient homes that were constructed in the beginning of 2000 through 2009 accounted for approximately fourteen percent of all occupied housing units.⁶ Increased home energy efficiency has been attributed to factors such as efficiency in heating equipment and better building shells that were built to meet more demanding energy *400 codes.⁷ For example, homes built after the year 2000 consume on average about 21 percent less energy for space heating than older homes.⁸

Building energy efficient homes is more expensive and can cut into a homebuilder’s profits. Federal and local governments have incentivized developers, builders and contractors with tax incentives that help them maintain a profit as they compete against “non-green” competitors.⁹ Under this approach, home-builders can take advantage of a tax incentive when they build a new property that meets higher efficiency standards, and new home owners get the advantage of a more energy efficient property. Nevertheless, these particular incentives are limited to new construction and do not apply to *existing* homes.

But what about the 85 percent of homeowners who are living in a home built before 2000? Do they have any incentives to update their property? Or is their only option to move to a more efficient home, leaving behind a property that could have been made more efficient, and therefore constitute an economically wasteful endeavor? There is a need for tax incentives that are focused on energy saving to help speed up the process of making American homes more efficient, and to allow older homes to compete with, and become more energy efficient like, new construction. Tax incentives that promote energy-efficient properties or the use of alternative fuels are a form of subsidy. As such, these tax incentives should be backed by sufficient funding and have stability.¹⁰ Tax credits and deductions that are enacted for only a short period of time, or only have a short applicability window create uncertainty, and “consumers are unwilling to risk investments without certainty.”¹¹ The tax incentives need to be “large enough to stimulate interest” and encourage the new investment, “particularly in the early years.”¹²

Both the federal and state governments have enacted an array of tax incentives (with states taking the lead) to help homeowners achieve a more energy efficient home and reduce natural resource consumption.¹³ At least thirty-six of the fifty states provide for some sort of energy renewal, or energy conservation tax *401 savings.¹⁴ The States have addressed the tax incentive issue in a multitude of ways with a focus on different factors. Some of the factors considered are whether you are a homeowner or a home-builder, if the credit or deduction is to only last a year or longer, and the dollar value of the incentives. Depending on whether the tax incentive is state or federal, aimed at a residential homebuyer or a commercial builder, the tax incentive may be in the form of an “income tax credit or deduction, a sales tax exemption, or a property tax exemption.”¹⁵ For residential homeowners, both the federal and state governments have primarily focused their approach on itemized, one-time deductions and credits (subject to potential carryforwards).

It is worth noting that like any investment, regardless of the cost or size of an incentive, a homeowner must do a cost benefit analysis to determine if a purchase or any improvement is worth investing in. This paper focuses on large scale improvements and recognizes that smaller upgrades and renovations may be worth the investment to the homeowner, regardless of tax obligations or costs, be it for home value or personal enjoyment. Subsection (a) discusses the current itemized “piecemeal” approach currently used by many of the states, and focuses on solar energy tax credits because of its widespread use. Next, subsection (b) discusses the ENERGY STAR program’s itemized tax incentive approach and how it addresses some of the investment issues current homeowners potentially face, and introduces the trend towards allowing homeowners more flexibility in creating an energy efficient home. Section II and its subsections introduce the whole home energy rating systems currently available to residential homeowners. Lastly, Section III and its subsections discuss the concept of expanding the whole home approach through property tax incentives that homeowners could take advantage of, and how such an approach is a logical, goal directed alternative (or companion piece) to the current system being implemented because of its potential to decrease energy consumption and spur investment.

a. The Piecemeal Approach--Solar Energy Tax Incentives

Itemized deductions and credits are some of the most popular ways to incentivize residential homeowners into making energy-efficient improvements to their homes.¹⁶ Solar panels are one such itemized item that has increased in popularity over the last decade as they have become more available and efficient. Both the federal and state governments offer a tax incentive for solar panels and *402 equipment. For example, Section 25D under Title 26 of the United States Code allows for a credit of thirty percent “of the qualified solar electric property expenditures made by the taxpayer during such year.”¹⁷ In Oregon, one of its state solar energy tax credit incentives allows for “\$1.90 per watt of installed capacity (DC) up to \$6,000 per residence [to be] taken over four years (\$1,500 per year) limited to 50 percent of the cost of the system.”¹⁸

In the above examples, “the installation of solar panels on a residence requires a personal capital expenditure rather than an expenditure funded by the government or a public utility.”¹⁹ While the installation of solar panels may add to a home’s value over time (and potentially increase property taxes), it also “adds to a home’s maintenance and repair costs, complicates roof repairs, and increases insurance costs.”²⁰ In spite of the added costs of installing and maintaining solar panels, the benefits arguably outweigh the burdens when one factors in the homeowner’s energy savings and our economy’s interest as a whole in reducing reliance on fossil fuels.²¹

It is important to note however, that for a homeowner to fully realize the complete economic value of a large purchase such as solar panels, a homeowner may have to live at their current residence longer than expected to recoup their investment.

Depending on the state, applicable incentives, and type of solar panel system installed, solar panel systems can range anywhere from \$10,000 to \$40,000.²² In Texas, the average net cost for solar installation is approximately \$21,000 and it could take up to fourteen years for a homeowner to recoup their investment.²³

Because of the time period required to recoup the initial investment in solar, tax incentives that focus on specific high cost items may be unduly prohibitive to many homeowners looking to renovate or upgrade their property. A tax incentive “should last long enough to overcome the market barriers and enable environmentally sound products to compete economically with older, less efficient *403 products.”²⁴ Therefore, for a homeowner who is not planning on living in the same residence for 10 or more years, the tax incentive may not be sufficient enough to spur investment.

b. The ENERGY STAR Approach

ENERGY STAR is a “U.S. Environmental Protection Agency voluntary program that helps businesses and individuals save money and protect our climate through superior energy efficiency.”²⁵ The program was established in 1992 with the initial purpose of conducting research “to develop, evaluate, and demonstrate non-regulatory strategies and technologies for reducing air pollution.”²⁶ The program has since been expanded to identify and promote energy--efficient products and buildings “in order to reduce energy consumption, improve energy security, and reduce pollution through voluntary labeling or other forms of communication about products and buildings that meet the highest energy efficiency standards.”²⁷

While the ENERGY STAR program educates and allows both homebuilders and homeowners the opportunity to qualify for certain tax incentives, homeowners are more limited in their ability to claim a tax credit or deduction through ENERGY STAR style incentives. In many states, builders can receive an array of tax incentives through ENERGY STAR partners if they build their homes to certain ENERGY STAR or HERS rating standards.²⁸ For example, one such ENERGY STAR partner in Arizona is the electric power company Arizona Public Service (“APS”). Under the APS partnership, “[p]roduction homebuilders may receive incentives up to \$1,500 for each new ENERGY STAR certified home. Certified homes with a HERS rating of 60 or better without renewable energy may [also] qualify for \$1,500.”²⁹

The ENERGY STAR program and its voluntary state partners do not offer a similar “certified” residence tax incentive for residential homeowners-- although a homeowner can still use the ENERGY STAR certified label as selling point. Instead, in the homeowner context, the ENERGY STAR program and label is used to inform homeowners as to what building materials and appliances are energy *404 efficient, and which items may qualify for federal tax credit(s) for energy efficiency in both new and existing homes.³⁰ Many federal energy tax incentives require products to be ENERGY STAR certified to qualify for the tax incentive.³¹ One of the reasons that the government may require an ENERGY STAR label for a homeowner to qualify for an itemized tax credit or deduction is that it is a way to verify the product’s energy efficiency without independent testing.³²

It is unclear how many homeowners are purposefully seeking out and taking advantage of the ENERGY STAR program. It is more readily apparent that homebuilders are taking advantage of the whole home tax incentive, as approximately twenty-six percent of all new homes constructed in 2011 were built to ENERGY STAR specifications.³³ It is debatable whether this shift towards building greener homes is purely based on the builder’s motive to take advantage of a tax incentive, or if it has to do more with consumer demand. Either way, the environment is benefiting because these new ENERGY STAR homes “consume at least 15 percent less energy than those built to the 2009 International Energy Conservation Code (IECC).”³⁴

If the purpose of energy efficient home tax incentives and alternative energy tax incentives are to reduce our dependence on foreign oil, reduce our human footprint, and reduce energy consumption, looking at the home as a single consuming unit as a basis to determine a tax incentive may make more sense than focusing solely on itemized deductions. To help illustrate this point, take into consideration that homeowners pay electricity and water bills, *not* refrigerator running bills, toaster using bills, etc. Viewing a home’s energy consumption as a whole may allow homeowners to better visualize the end goal and the cost/savings benefits associated with “energy efficient” purchases and renovations. Building materials, appliances, home styles, and technologies are constantly changing and evolving, which may also affect a homeowner’s decision to make a large energy-saving improvement purchase.

*405 Recently, the National Association of Home Builders (“NAHB”) used consumer preference surveys to identify several trends for residential construction by 2015.³⁵ The NAHB predicts “consumers will demand smaller homes by 2015 - 10

percent smaller than the average size of family homes built in 2010.”³⁶ This would be reversing the trend of the last ten to fifteen years of building larger homes.³⁷ The NAHB also surveyed home builders, and “68 percent felt that future homes will include more green features, and will offer ENERGY STAR ratings for the whole house.”³⁸

The piecemeal approach (and its yearly tax break limitation caps) is currently the only approach for most residential homeowners. This approach may lack the cost/savings incentive necessary to spur a homeowner to invest and update an older home. This may be especially true for younger homeowners who tend to move more frequently (discussed *infra*), and who may be less willing to give up their option for mobility after performing a cost-benefit analysis. However, using a whole home energy rating system as an alternative (or complimentary) means to the piecemeal approach has the potential to allow prospective home renovators and purchasers to more efficiently allocate resources.

II. THE WHOLE HOME APPROACH

a. The Home Energy Rating System

Developers, builders, homeowners, and organizations such as ENERGY STAR, use the Home Energy Rating System (“HERS”) to determine a home’s energy use and consumption.³⁹ The HERS index requires a certified rater (“RESNET”) to assess the energy efficiency of a home and assign it a relative performance score on a scale from zero to 150 (the “HERS Index Score”).⁴⁰ A *406 HERS rating usually costs the average homeowner between \$300 and \$800.⁴¹ The lower a home’s HERS Index Score, the more energy efficient the home.⁴² To calculate a home’s HERS Index Score, a RESNET technician conducts a series of tests and calculations on a home and compares the data against a “Reference Home”--“a designed-model home of the same size and shape as the actual home[.]”⁴³ Some of the variables taken into consideration include: the structure’s shell (walls, roof, and foundation), floors and ceiling, windows and doors, vents and ductwork, HVAC system, water heating system, and the home’s thermostat.⁴⁴

The HERS uses a technical formula that takes into account various forms of energy use data.⁴⁵ A simplified version, as provided below, shows the basis concept. “E” stands for energy consumption, “WH” stands for water heating, and “LA” stands for lights and appliances.⁴⁶

$$\text{HERS Index} = PE_{\text{frac}} \times 100 \times \frac{(E_{\text{heating}} + E_{\text{cooling}} + E_{\text{WH}} + E_{\text{LA}})_{\text{rated home}}}{(E_{\text{heating}} + E_{\text{cooling}} + E_{\text{WH}} + E_{\text{LA}})_{\text{rated home}}}$$

47

“PE” stands for purchased energy and it is “a multiplier that can reduce the HERS Index for homes that produce some or all of the energy they use over the course of a year[.]”⁴⁸

$$PE_{\text{frac}} = \frac{E_{\text{used}} - E_{\text{produced}}}{E_{\text{used}}}$$

*407 Using this formula, “[i]f the rated home’s energy use is half of the Reference Home’s energy use, the HERS Index would be 50 [and] [i]f the rated home uses twice as much as the Reference Home, the Index would be 200.”⁵⁰ According to the U.S. Department of Energy, the typical resale home “scores 130 on the HERS Index while a home built to the 2004 International Energy Conservation Code is awarded a rating of 100.”⁵¹ The goal is for a home to be assigned as low a number as possible. That is to say, “a home with a HERS Index Score of 70 is 30 [percent] more energy efficient than the RESNET Reference Home” and “a home with a HERS Index Score of 130 is 30 [percent] less energy efficient than the RESNET Reference Home.”⁵²

LEED certification is another approach to rating the energy use of a property. Unlike HERS, LEED certification looks at an owner’s property as a whole, and is not limited to rating only the electrical consumption of a home. LEED certification has been used primarily in the commercial and residential development context. However, LEED certification is also available to individual homeowners. The next section discusses the applicability of LEED certification.

b. LEED

LEED, or Leadership in Energy & Environmental Design, is another rating system used by builders, developers, and homeowners. LEED is “a green building certification program that recognizes best-in-class building strategies and practices.”⁵³ The LEED rating system “was developed by the U.S. Green Building Council to provide a national benchmark for the design, construction and operation of high performance sustainable buildings.”⁵⁴ LEED applies to “commercial, residential and entire neighborhood communities, and works throughout the building lifecycle design and construction, operations and maintenance, tenant fitout, and significant retrofit.”⁵⁵ The LEED certification program has four levels, with the lowest certification (“certified”) beginning at 40 points, and the highest (“platinum”) *408 beginning at 80.⁵⁶ “[T]he number of points a project earns determines the level of LEED certification that the project will receive.”⁵⁷ Unlike HERS, the LEED rating system calculates more than just a home’s electrical energy consumption.⁵⁸ The LEED standards categories and their maximum total point potential are illustrated in the following table:⁵⁹

Innovation and Design Process	11
Location and Linkages	10
Sustainable Site	22
Water Efficiency	15
Energy and Atmosphere	38
Materials and Resources	16
Indoor Environmental Quality	21
Homeowner Awareness	3
Total Possible Points	136

LEED certification can be costly. In the commercial context, the certification costs alone can easily exceed \$20,000.⁶⁰ While the cost for an individual⁶¹ homeowner to receive a LEED certified property is substantially less than the commercial certification, it can still be expensive. For a single residence, the cost of the certificate--which does not include the fees charged by the verification team or the building materials-- is \$300.⁶² The tests performed by the verification team on homes are specified ENERGY STAR ratings tests.⁶³ It is important to note, that when factoring in “fees, required advisors ... construction practices, materials, research, and design time[,]” the true dollar amount for the LEED *409 certification on an average sized residential home can easily fall into the \$5,000 - \$15,000 range.⁶⁴

A number of states have begun to enact different types of incentives to encourage construction of LEED certified buildings--both commercial and residential--including: tax incentives, fee reductions and waivers, grants, and expedited permitting.⁶⁵ Both ENERGY STAR and LEED Certification are valuable tools available to homeowners in ascertaining or creating an energy efficient property. However, while builders and developers are able to claim a direct tax or other benefit directly related to their building’s energy rating, very few state programs allow for homeowners to capitalize in the same manner.⁶⁶ Instead, most homeowners are limited to individual, pre-approved improvements that do not take into account a building’s overall efficiency.

III. EXPANDING THE WHOLE HOME APPROACH THROUGH A TRANSFERRABLE AND RENEWABLE PROPERTY TAX INCENTIVE

a. Baltimore’s Approach

At least one state has begun to experiment with allowing homeowners to claim a property tax break for their residential property.⁶⁷ Maryland “permits local governments (Md Code: Property Tax § 9-242) to offer property tax credits for high performance buildings if they choose to do so.”⁶⁸ A “High Performance Home” is defined by section 11-2-203.2 (i)-(ii) of the Baltimore County Code, and applies to “a new or renovated residential structure that achieves at leas[t] a [LEED] silver rating *410 according to the U. S. Green Building Council.”⁶⁹ In 2008, Baltimore County exercised this option and adopted a provision that allowed for property tax credits for newly constructed high performance homes, and in 2010 added provisions for energy efficiency improvements in existing homes.⁷⁰

“The credit is formulated as a percentage (%) reduction in total county real property taxes assessed on the property over the course of several years. The level and duration of the allowable credit varies according to building type, [applicable tax incentive provision], and level of performance.”⁷¹ The residential property tax credit uses LEED as a qualification standard, but also includes an additional track that allows a home to qualify for a credit “based on its level of efficiency as compared to an energy use baseline.”⁷² For a residential home, “new construction projects that take the energy performance track, the baseline for determining a 30 percent energy improvement is the county building code.”⁷³ For existing homes “the baseline is determined by the existing energy efficiency of the structure prior to the improvements.”⁷⁴ “The duration of Baltimore’s tax incentive is limited; tax credits are authorized for a maximum of five years and a minimum of three years, depending on the category of LEED design undertaken.”⁷⁵ The following table illustrates the different tax break levels for residential homes:⁷⁶

PERFORMANCE LEVEL	CREDIT AMOUNT	TERM
LEED for Homes Platinum or NGBS Emerald	100 percent	3 years
LEED for Homes Gold or NGBS Gold	60 percent	3 years
LEED for Homes Silver or NGBS Silver	40 percent	3 years
30 percent+ Energy Efficiency Improvement	Varies by percent Improvement, 30 percent Minimum	3 years

All Performance Levels, Carbon Neutral	Varies by Performance	5 years
--	-----------------------	---------

***411** These property tax incentives are tied to the land and remain in effect if the property is subsequently sold and transferred.⁷⁷ However, the credit may be terminated “if it is determined that alterations which do not comply with the law have been made to the structure.”⁷⁸ The credit amount is not limitless, but is nonetheless substantial, with a one million dollar cap for any fiscal year.⁷⁹ It is also not clear from the statute’s wording if the credit is renewable or if it is, what that entails and how it affects the credit amount.

b. A Transferable and Renewable Property Tax Incentive May Spur Investment in Older Homes.

An energy efficient whole home approach is a logical, goal directed alternative (or companion piece) to the current system being implemented. The key attributes of a property tax incentive should include transferability and renewability. Homeowners for the most part, are limited to taking individual deductions for qualifying appliances, building materials, and energy sources. Currently most states only allow developers, builders, and contractors the ability to claim a direct tax credit or deduction for building or renovating a home that meets a certain energy rating, and they may be able to claim this tax incentive on each home that they build or remodel. Creating a property tax incentive for energy efficient homes could balance the interests of the homeowner (weighing the cost to implement changes against increasing home value and lowering utility bills) with the government’s and society’s interests in decreasing energy consumption and protecting the environment.

As discussed above, Maryland has codified one approach⁸⁰ but a more generalized concept could be stated as follows: A home that falls within a specified energy rating zone, as determined by an ENERGY STAR, HERS, or LEED rating standard, that is certified by a verified rater such as a RESNET technician, would be granted a tax break equal to (to be determined on an individual state and county level) a certain percent of the property owner’s property tax obligations or a set dollar amount. This incentive could incorporate tiered levels of incentives that increase or decrease depending on the home’s energy rating. The credit would be available each year the homeowner’s residence qualifies (or the property is ***412** reassessed), with fiscal caps. The cost of the inspection would be at the expense of the homeowner, and the homeowner’s residence would be compared to a Reference Home that is updated every few years to reflect the standard energy use and efficiency of the average, comparable American (or a particular state’s) home. When the Reference Home is updated, the homeowner must have his home re-inspected prior to his next property tax assessment to continue to qualify for the credit. Lastly, the tax incentive should be tied to the land, renewable and transferrable to subsequent buyers.

A property tax incentive would have to be a state level endeavor because only states impose property taxes.⁸¹ A homeowner’s property tax equals a percentage of the assessed value of the property “and may be levied in some form at every level of government--state, county, municipal, township, school district, and special district.”⁸² Depending on a homeowner’s particular state, a home’s value may be assessed yearly like in the District of Columbia, or once every set period of years such as in Maryland, where a residential property is reassessed every three years.⁸³

The money collected from property taxes is significant, so any tax incentive that draws from that revenue base must serve significant state interests. In 2010, “states and localities collected \$441 billion [in property taxes, with] nearly 97 percent [collected] at the local level.”⁸⁴ Because of the importance of property taxes to state and local governments, differences in property tax collection timing, and varying state budgets and goals, there is not one correct answer as to how much of a tax break a homeowner should receive for meeting a specific home energy rating.⁸⁵ It is just one of the important factors to keep in mind when balancing the other economic (budget restraints and energy savings) and social goals (natural resource conservation) of the states.

A correctly implemented property tax incentive that is renewable, substantial, and tied to the land could encourage homeowners to make larger--and arguably more expensive--eco-friendly improvements to their homes in a way that would best benefit the individual homeowner. Younger generations of Americans are ***413** moving more frequently than past generations. Research conducted by the National Association of Realtors shows that when “Baby Boomers” purchase a home, they expect to live at that residence for twenty years.⁸⁶ The “X” generation on the other hand plans to live in a newly purchased home for fifteen years and the “Y/Millennials” generation for only ten years.⁸⁷

According to the National Association of Realtor’s chief economist, Lawrence Yun, the younger generations still believe

home buying is a strong long-term investment.⁸⁸ Yun also stated that, “however, the challenges of tight credit, limited inventory, eroding affordability and high debt loads have limited the capacity of young people to own.”⁸⁹ The increase in financial burdens and the decrease in time homeowners are staying in a particular location may disincentivize a homeowner from investing in energy saving appliances, building materials, and alternative energy sources.

To illustrate this point, millennials may forgo investing in a solar panel system that would take over ten years to recoup the investment, even if there is a tax incentive to purchase the initial system.⁹⁰ In this example, the homeowner would not be able to enjoy his or her full investment. If the homeowner is lucky or planned correctly, they have recouped their home upgrade investments by the time they want to move, and they are not penalized by having to stay in the residence longer to recover their costs. The next buyer of the home can of course take advantage of the seller’s improvements, but he does so at the cost of a potentially higher purchase price and possibly higher property taxes. There is also the possibility that society and the government lose out on an opportunity to decrease a source of energy consumption because the investment is not worth the risk or cost to the homeowner. If the current trend in buying and selling continues, a piecemeal (itemized) tax incentive approach may require higher tax credit limits (more subsidization), or at the very least, adjustments to yearly tax deduction caps to allow ***414** for greater cash recoupment early in the investment to account for the shorter time home owners are willing to live at a single location.

A whole home tax incentive may solve this problem by distributing the cost of energy improvements between home buyers, sellers, and the government. A renewable and transferable property tax incentive that is tied to the land would shift certain tax obligations and put the purpose of the incentive-- creating energy efficient properties, reducing energy consumption, and promoting environmental health--front and center. It could give homeowners more flexibility in upgrading their home, greater selling power, and the ability to realize savings as long as their home qualifies for the incentive, instead of taking a limited credit allowance or deduction every year that is subject to various limitations and timing constraints.

To illustrate the point, suppose a homeowner pays for a certified RESNET technician to rate his home. After the inspection, the homeowner is told that his home’s energy consumption is equivalent to the average home. The inspector then recommends a solar energy system and energy efficient doors and windows in order to improve the home’s rating. If the homeowner were to use the current, itemized approach, they may be limited to a \$500 yearly deduction, subject to further limitations based upon prior energy deductions.⁹¹ For the homeowner to receive the most preferential tax breaks, the homeowner would have to stage his improvements and space them out far enough so that he or she would be able to take the \$500 credit as many times as possible. For homeowners in this scenario to recoup their full investment while receiving the full benefit of the tax treatment, they would have to stay in their current residence for a longer period of time. For the new generation of homeowners who tend to live at property for ten years or less⁹² there is little incentive to implement a single large improvement, or even multiple small improvements if they must sacrifice their freedom of movement to see a return on investment.

An energy-efficient whole home property tax incentive that is tied to the land and transferable could increase a home’s resale value for two reasons. First, homeowners are increasingly seeking out energy efficient properties.⁹³ By placing a home’s energy rating in an easily accessible location (via property tax records or on the seller’s listing or a multiple listing service⁹⁴) homebuyers can more easily search ***415** for energy efficient properties. Second, homebuyers and sellers can factor in the potential property tax savings into the home price. These two factors are interrelated. For example, a seller who renovates her property and receives a high energy rating could factor in the transferable value of the property tax savings when listing her property. Without having a home’s energy rating in an easily accessible location such as in MLS or on property tax records a potential buyer would not be able to easily factor in the home’s energy efficiency and its potential savings into the home’s cost.

Conversely, a homebuyer looking to purchase an already qualifying energy efficient home, or planning to make improvements to his current home, could factor in the potential property tax savings when contemplating a purchase price or home budget. While “[h]ome buyers certainly consider property taxes when making the decision to buy a home ... their impact is rarely considered when improvements are planned because property taxes are not an immediate consequence of the purchase decision.”⁹⁵ An energy efficient home property tax incentive would allow property taxes to be factored into eco-friendly renovation decisions.

Recognizing a home as a single energy consuming unit is gaining traction. Mortgage companies have begun to factor in the value of energy efficient homes in terms of buying power and homeowners can already seek energy mortgages.⁹⁶ An energy

mortgage “is a mortgage that credits a home’s energy efficiency in the home loan.”⁹⁷ There are two types of energy mortgages: an Energy Improvements Mortgage and an Energy Efficiency Mortgage.⁹⁸ The Energy Improvement Mortgage “[f]inances the energy upgrades of an existing home in the mortgage loan using monthly energy savings.”⁹⁹ This concept factors in the money saved in monthly utility bills to finance a homeowner’s energy improvement projects.¹⁰⁰ The Energy Efficient Mortgage factors in “the energy savings from a new energy efficient home to increase the home buying power of consumers and capitalizes the energy savings in the appraisal.”¹⁰¹ This approach gives the potential home buyer “the ability to buy *416 a higher quality home because of the lower monthly costs of heating and cooling the home.”¹⁰²

An energy efficient home property tax incentive would affect taxes at both the state and federal level. Property taxes are deductible.¹⁰³ A homeowner who takes advantage of a property tax break will have less property tax to deduct and would have to pay slightly more tax to the federal government if they choose to itemize their deductions. States would initially see a decrease in property tax revenue. The decrease in property tax could theoretically be offset in part by higher resale values of homes in the form of higher gains, and in part by stirring economic activity as homeowners purchase appliances, materials, and services to meet the energy requirements of the incentive.

A study conducted in 2001 by the American Council for an Energy-Efficient Economy outlined eight principles for energy efficiency tax incentives.¹⁰⁴ The study noted that tax incentives should:

- I. Stimulate commercialization of advanced technologies;
- II. Establish Performance criteria and pay for results;
- III. Pay substantial incentives;
- IV. Choose technologies where first cost is a major barrier;
- V. Be flexible in terms of who receives the credit (whether manufacturer or consumer);
- VI. Complement other policy initiatives;
- VII. Select priorities but offer incentives in a variety of areas to increase the likelihood of success; and
- VIII. Allow adequate time before phases out the incentives.”¹⁰⁵

A property tax break incentive could “stimulate commercialization of advanced technologies” by allowing for greater free market innovation. The current itemized tax incentive approach hinders innovation and development because it allows the government, not the free market, to pick what industries it considers energy industry winners and losers, and provides its incentives accordingly. This could be seen as a form of corporatism. Corporatism is “a political philosophy in *417 which economic activity is controlled by large interest groups or the government.”¹⁰⁶ Edmund S. Phelps, a Nobel Laureate in economics and director of the Center on Capitalism and Society at Columbia University, has serious doubts on the economic premise that the “government can spark innovation in the private sector by providing finance for development and marketing of new products or methods in companies or industries that offer promise, at least in the government’s view.”¹⁰⁷

The problem with this approach is that “successful companies aren’t usually started this way.”¹⁰⁸ Professor Phelps suggests that in free-market capitalism, “from 10,000 business ideas, 1,000 firms are founded, 100 receive venture capital, 20 go on to raise capital in an initial public offering, and two become market leaders.”¹⁰⁹ The odds appear to be against the government in picking a dispositive market winner.¹¹⁰ So, while the government may have good intentions by putting its incentives directly behind an industry making scientific breakthroughs such as it has with solar, “[t]here is no evidence that innovating in America is or has been tethered to scientific advances.”¹¹¹ “The myriad of new products of recent decades were mostly created by new commercial ideas and tinkering, not by new scientific advances.”¹¹² By the government only subsidizing certain industries, the private sector might be discouraged from developing other types of energy saving products if government incentives cause buyers to choose one type of product over the other. Instead, if the government’s focus was on subsidizing energy efficient homes, how a homeowner achieves an energy-efficient home is only limited by the free market’s capability and innovation.

Allowing the private sector complete freedom in developing products, and how to best approach an energy efficient home is not without its own set of risks. “[E]nterprises in the private sector are prone to making mistakes when deciding to develop new products--since feasibility, cost and market reception are all unknown.”¹¹³ However, allowing the government to control what energy products ***418** should receive the highest incentives comes with its own set of problems. The difficulty with a corporatism approach is that “it places those decisions in the hands of government officials who are remote from the local expertise and insights that companies draw on for dynamic innovation.”¹¹⁴ An itemized deduction approach may curb market innovation and disincentivize companies from experimenting and deviating from already approved incentivized items.¹¹⁵ This creates a tax incentive program that is reactive, and not adaptive.

An energy-efficient property tax incentive would allow for the most innovation while still adhering to government mandated requirements. Energy rating systems such as LEED “validate the work of innovators and help them market their products.”¹¹⁶ Using the home’s energy consumption as the only limiting factor and using an energy rating index as a guide will allow homeowners and builders more freedom in investment and customization. Stimulating commercialization of advanced technologies is only one of the factors to consider when developing efficient tax incentives. The end goal is an energy efficient property. Placing the incentive qualifier on reaching a certain HERS Index Rating or LEED certification level does not stifle the stimulation and advancement of new technologies. To the contrary, it tells the free market--both those supplying and buying--what it takes to qualify and allows for the most efficient, cost-effective, and flexible technologies to win out.

Furthermore, it is easy to establish performance criteria with a whole home energy approach. Both HERS and LEED have clear performance criteria that the states could adjust to fit their own specific goals and budgetary constraints. Using LEED as a performance benchmark would ensure quality control. “In the absence of high government standards for construction, the LEED award is useful from a consumer’s perspective because it verifies quality claims.”¹¹⁷ The HERS Index could also be adopted and modified to serve as the performance criteria. Currently, the HERS Index assigns a home a relative performance score on a scale from zero to 150.¹¹⁸ This is arguably too large and specific of a scale for tax incentive purposes, unless a range is used to determine qualification. Applying a tiered system, such as ***419** the LEED Certification approach, would be easier for homeowners to understand and apply.

As discussed above, an energy efficient home with a transferable tax incentive could raise the resale value homes because there is potential for tax revenue coming in the form of larger recognized gains on the sale of the home (subject to 26 U.S.C.A. § 121’s gain exclusions).¹¹⁹ Because there would be less property taxes being deducted, more money would be reported as federal income.¹²⁰ This slight increase in tax revenue to the federal government could be used to subsidize the states into enacting this type of energy incentive legislation. Because property taxes play such a large role in state budgets,¹²¹ a federal subsidy may be required to ease the burden on the states if there is widespread initial adoption of the incentive by homeowners.

This approach would also allow for adequate investment time before the incentive phases out. By using an adaptable Reference Home that is regularly updated to current energy use standards, the incentive may substantially phase itself out over time--especially if the program is successful and new homes continue to be built to higher energy code standards. To illustrate this point, suppose as U.S. home energy efficiency increases, the “Reference Home” energy efficiency standard also increases. This could theoretically eventually plateau, or at the very least, become a high enough standard that for a home to achieve an energy rating beyond this standard would not be worth the cost of improvement.

IV. CONCLUSION

A tax incentive for an energy efficient property should be adaptive to market trends, innovation, and technological advancement. A renewable and transferable property tax incentive that is tied to the land would place the purpose of the incentive--creating energy efficient properties, reducing energy consumption, and promoting environmental health--front and center. It has the potential to allow homeowners more flexibility in upgrading their homes, greater selling power, and the ability to realize savings as long as their property qualifies for the incentive.

Footnotes

- ^{a1} Erik is a third-year law student at the University of Arizona James E. Rogers College of Law, where he serves as Senior Note Editor on the *Arizona Journal of Environmental Law & Policy*. He graduated *magna cum laude* from Arizona State University in 2011 with a Bachelor of Art in English.
- ¹ Amy Bray, *How to Create A Green Community Take Eco-Friendly Building A Step Further*, PRAC. REAL EST. LAW., July 2008, at 47, 52.
- ² Lindsay Wilson, *Average household electricity use around the world*, SHRINK THAT FOOTPRINT, <http://shrinkthatfootprint.com/average-household-electricity-consumption> (last visited Oct. 13 2014).
- ³ *Frequently Asked Questions*, U.S. ENERGY INFO. ADMIN. (last updated Feb. 20, 2015), <http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3>.
- ⁴ Dennis Cauchon, *Household electricity bills skyrocket*, USA TODAY (Dec. 13, 2011), <http://usatoday30.usatoday.com/money/industries/energy/story/2011-12-13/electricbills/51840042/1>.
- ⁵ *Today in Energy*, U.S. ENERGY INFO. ADMIN. (Feb. 12, 2013), <http://www.eia.gov/todayinenergy/detail.cfm?id=9951#>. *But see* Arik Levinson, *How Much Energy Do Building Energy Codes Really Save? Evidence from California*, pg. 9 (DRAFT Sept. 28, 2014), <http://www.ncsu.edu/cenrep/workshops/TREE/documents/BuildingCodes.pdf>. (“People predisposed to use more energy presumably seek out energy-efficient homes, and residents who find themselves in energy-efficient homes use more energy services because the cost of doing so is lower.”)
- ⁶ *Today in Energy*, U.S. ENERGY INFO. ADMIN. (Feb. 12, 2013), <http://www.eia.gov/todayinenergy/detail.cfm?id=9951#>.
- ⁷ *Id.*
- ⁸ *Id.*
- ⁹ Robyn L. Dahlin & Alex R. Pederson, *Energy Act Offers Tax Benefits to Developers*, 2006 WL 2220987 at 1.
- ¹⁰ Mona L. Hymel & Roberta F. Mann, *Getting Into the Act: Enticing the Consumer to Become “Green” Through Tax Incentives*, 36 ENVTL. L. REP. 10419 (June 2006); 18 ARIZ. LEGAL STUD. DISCUSSION PAPER NO. 06-18, <http://ssrn.com/abstract=894131> (discussing policy incentives for consumers to purchase renewable energy).
- ¹¹ *Id.* at 10420.
- ¹² *Id.*

13 *Id.*

14 *Id.* at 10428.

15 *Id.*

16 *Id.*

17 26 U.S.C.A. § 25D (West 2015).

18 *Residential Energy Tax Credits for Solar*, OREGON DEPT. OF ENERGY,
<http://www.oregon.gov/energy/RENEW/Pages/solar/Support-RETC.aspx> (last visited Oct. 14, 2014).

19 Jeffrey D. Moss, *Solar Panels, Tax Incentives, and Your House*, PROB. & PROP., January/February 2010, at 17, 18.

20 *Id.*

21 *Id.*

22 Zachary Shahan, *Price Of Solar Much Lower Than Solar Savings*, CLEAN TECHNICA (Feb. 1, 2014),
<http://cleantechnica.com/2014/02/01/real-cost-solar/>.

23 *Id.*

24 Hymel & Mann, *supra* note 11.

25 *About*, ENERGY STAR, <https://www.energystar.gov/about/> (last visited Sept. 9, 2014).

26 *Id.*

27 *Id.*

28 *New Homes Partners in Arizona*, ENERGY STAR,
http://www.energystar.gov/index.cfm?fuseaction=new_homes_partners.showStateResults&s_code=AZ (last visited Oct. 14, 2014).

29 *Id.*

30 *Federal Tax Credits for Consumer Energy Efficiency*, ENERGY STAR,
http://www.energystar.gov/index.cfm?c=tax_credits.tx_index (last visited Oct. 16, 2014); *see infra* note 33.

31 *Products*, ENERGY STAR, <http://www.energystar.gov/products/certified-products> (last visited Oct. 16, 2014).

32 *Products*, ENERGY STAR, http://www.energystar.gov/index.cfm?c=windows_doors.pr_taxcredits (last visited Oct. 16, 2014).

33 *Today in Energy*, U.S. ENERGY INFO. ADMIN. (Oct. 16, 2012), <http://www.eia.gov/todayinenergy/detail.cfm?id=8390>.

34 *Id.*

35 *In Brief*, 31 Energy Design Update 9, 10 (2011), <http://admin.nahb.org/generic.aspx?genericcontentID=153664&print=false>.

36 *Id.*

37 U.S. ENERGY INFO. ADMIN., *supra* note 6.

38 *In Brief*, 31 Energy Design Update 9, 10 (2011), <http://admin.nahb.org/generic.aspx?genericcontentID=153664&print=false>.

39 ENERGY STAR Certified Homes, Version 3 (Rev. 07) HERS Index Target Procedure for National Program Requirements (June 1, 2013), http://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/ES_HERS_Index_Target_Procedure.pdf.

40 *Understanding the HERS Index*, RESNET HERS INDEX, <http://www.hersindex.com/understanding#> (last visited Sept. 9, 2014).

41 *Energy Efficient Mortgage Homeowner's Guide*, U.S. DEPT. OF HOUS. & URBANDEV., http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/eem/eemhog96/ (last visited Nov. 5, 2014).

42 *Understanding the HERS Index*, RESNET HERS INDEX, <http://www.hersindex.com/understanding#> (last visited Sept. 9, 2014).

43 *Id.*

44 *Id.*

45 *See Mortgage Industry National Home Energy Rating Systems Standards*, RESNET, Ch. 3 (Jan. 2013), http://www.resnet.us/standards/RESNET_Mortgage_Industry_National_HERS_Standards.pdf.

46 Allison Bailes, *Everything You Ever Wanted to Know about the HERS Index*, ENERGY VANGUARD BLOG (Oct. 16, 2014), <http://www.energyvanguard.com/blog-building-science-HERSBPI/bid/53998/Everything-You-Ever-Wanted-to-Know-about-the-HERS-Index>.

47 *Id.*

48 *Id.*

49 *Id.*

50 *Id.*

51 *Understanding the HERS Index*, RESNET HERS INDEX, <http://www.hersindex.com/understanding#> (last visited Sept. 9, 2014).

52 *Id.*

53 *LEED*, U.S. GREEN BLDG. COUNCIL, <http://www.usgbc.org/leed> (last visited Nov. 10, 2014).

54 *LEED for Residential*, CERTAINTEED, <http://www.certainteed.com/BuildingResponsibly/LeedResidential> (last visited Nov. 10, 2014).

55 *About LEED*, U.S. GREEN BLDG. COUNCIL, <http://www.usgbc.org/articles/about-leed> (last visited Nov. 10, 2014).

56 *Certification*, U.S. GREEN BLDG. COUNCIL, <http://www.usgbc.org/certification> (last visited Nov. 10, 2014).

57 *Id.*

58 *LEED for Residential*, CERTAINTEED, <http://www.certainteed.com/BuildingResponsibly/LeedResidential> (last visited Nov. 10, 2014).

59 *Id.*

60 *LEED Certification Fees*, U.S. GREEN BLDG. COUNCIL, <http://www.usgbc.org/certguide/fees#homes> (last visited Nov. 12, 2014). (LEED certification costs vary depending on the type of project undertaken, level of certification, and timeframe).

61 *Id.*

62 *LEED Certification Fees*, U.S. GREEN BLDG. COUNCIL, <http://www.usgbc.org/certguide/fees#homes> (last visited Nov. 12, 2014).

63 *Id.*

64 Rebecca Firestone, *LEED for Homes: Is It Worth It?*, GREEN COMPLIANCE PLUS, <http://greencomplianceplus.markenglisharchitect/discussions/leed-homes-worth/> ((last visited Nov. 12, 2014). LEED certification pursued by individual residential homeowners is not generally used. *Id.* This could be attributed to the initial cost, lack of knowledge about the program, and its benefits. *Id.* Homeowners who pursue LEED certification on their residence appear to be people in the housing/construction/development business or more sophisticated buyers.

65 *See Summary of Government LEED® Incentives*, U.S. GREEN BLDG. COUNCIL (March, 2009), <http://www.usgbc.org/Docs/Archive/General/Docs2021.pdf>.

66 *See Id.*

67 *Id.* at 8.

68 *Baltimore County--Property Tax Credit For High Performance Buildings And Homes*, U.S. ENERGY INFO. ADMIN., <http://energy.gov/savings/baltimore-county-property-tax-credit-high-performance-buildings-and-homes> (last visited Apr. 5, 2015).

69 *High Performance Homes Tax Credit*, BALTIMORE COUNTY, <http://www.baltimorecountymd.gov/Agencies/budfin/customerservice/taxpayerservices/taxcredits/performancehomes.html> (last

revised Sept. 30, 2014).

70 *Baltimore County, supra* note 68.

71 *Id.*

72 *Id.*

73 *Id.*

74 *Id.*

75 *Maryland Law Green Buildings & Energy Efficiency EPA Region 3 Municipality - Baltimore County Property Tax Credit for High Performance Buildings and Homes*, DOCSTOC.COM, http://www.docstoc.com/docs/160517792/BaltimoreCntyMDGrnBldg_EnrgyOrd (last updated Aug. 31, 2013).

76 *Baltimore County, supra* note 68.

77 *Maryland, supra* note 76, at 4.

78 *Id.* at 3.

79 *Id.* at 1.

80 *Baltimore County, supra* note 68.

81 *See* U.S. Const. art. I, § 9, cl. 4 (“No Capitation, or other direct, Tax shall be laid, unless in Proportion to the Census or Enumeration herein before directed to be taken.”).

82 Kim Rueben & Yuri Shadunsky, *The Tax Policy Briefing Book*, TAXPOL.CENT., <http://www.taxpolicycenter.org/briefing-book/state-local/specific/property.cfm> (last updated May 9, 2013).

83 *Compare Real Property Assessments and Appeals FAQ*, DC.GOV, <http://otr.cfo.dc.gov/page/real-property-assessments-and-appeals-faqs> (last visited, Oct. 21, 2014).

84 Rueben & Shadunsky, *supra* note 82.

85 *See, e.g., Baltimore County, supra* note 68.

86 *2014 National Association of Realtors Home Buyer and Seller Generational Trends*, NATIONAL ASSOCIATION OF REALTORS RESEARCH DIVISION, (Mar. 2014), <http://www.realtor.org/sites/default/files/reports/2014/2014-home-buyer-and-seller-generational-trends-report-full.pdf>.

87 *Id.*

88 Walter Molony, *NAR Generational Trends Study Shows Confidence in Market, Some Challenges*, (Mar. 11, 2014), NAT'L ASSOC. OF REALTORS, <http://www.realtor.org/news-releases/2014/03/nargenerational-trends-study-shows-confidence-in-market-some-challenges>.

89 *Id.*

90 *See* Shahan, *supra* note 22.

91 *See* IRS Form 5695 (2013), <http://www.irs.gov/pub/irs-pdf/f5695.pdf>.

92 Molony, *supra* note 88.

93 Bray, *supra* note 1.

94 James Kimmons, *Multiple Listing Service*, REALESTATE.ABOUT.COM., <http://realestate.about.com/od/mo/g/defmls.htm>. (last visited Jan. 2, 2015).

95 Hymel & Mann, *supra* note 11.

96 *Energy Efficient Mortgage Homeowner's Guide*, U.S. DEP'T. HOUS. & URBAN DEV, http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/eem/eemhog96/ (last visited Nov. 5, 2014).

97 *Mortgage Information*, RESNET, <http://www.resnet.us/professional/ratings/mortgages> (last visited Nov. 5, 2014).

98 *Id.*

99 *Id.*

100 *Id.*

101 *Id.*

102 *Id.*

103 *Topic 503 - Deductible Taxes*, IRS, <http://www.irs.gov/taxtopics/tc503.html> (last updated Mar. 05, 2015).

104 Hymel & Mann, *supra* note 11.

105 *Id.* (citing Patrick Quinlan et al., TAX INCENTIVES FOR INNOVATIVE ENERGY-EFFICIENT TECHNOLOGIES, ACEEE Rep. No. E013 (2001), <http://www.aceee.org>).

106 Robert J. Shiller, *Why Innovation Is Still Capitalism's Star*, THE NEW YORK TIMES (Aug. 17, 2013), http://www.nytimes.com/2013/08/18/business/why-innovation-is-still-capitalismsstar.html?pagewanted=all&_r=1&.

¹⁰⁷ Edmund S. Phelps, *Less Innovation, More Inequality*, OPINIONATOR (Feb. 24, 2013), http://opinionator.blogs.nytimes.com/2013/02/24/less-innovation-more-inequality/?_r=1.

¹⁰⁸ Shiller, *supra* note 106.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ Phelps, *supra* note 107.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *See Id.* (“Operating an industrial policy runs the risk that government officials--perhaps unconsciously--will do what is best for their political prospects rather than what they might agree was best if they were not directly involved.”).

¹¹⁶ Rebecca Firestone, *LEED for Homes: Is It Worth It?*, GREEN COMPLIAN CEPLUS, <http://greencomplianceplus.markenglisharchitect/discussions/leed-homes-worth/> (last visited Nov. 12, 2014) (citing Dan Johnson).

¹¹⁷ *Id.*

¹¹⁸ RESNET, *supra* note 40.

¹¹⁹ 26 U.S.C.A. § 121 (West 2015).

¹²⁰ 26 U.S.C.A. § 164 (West 2015).

¹²¹ Rueben & Shandunsky, *supra* note 84.