



Arboreal Energy Efficiency Tax Credit

Besides the obvious aesthetic contribution made by trees in the managed landscape, trees offer environmental and consumer cost savings that actually **increase** in value and return on investment over time. A report by the U.S. Department of Energy (DoE) entitled, "Landscaping for Energy Efficiency" states that, "carefully positioned trees can save up to 25% of a household's energy consumption for heating and cooling." This research, which warranted the inclusion of "landscaping" into the DoE's "Consumer's Guide to Energy Efficiency and Renewable Energy," predicted that the proper placement of only three trees could save an American household up to \$250 in energy costs annually, providing enough energy savings to return the investment in less than 8 years.

While American consumers are incentivized to purchase energy efficient appliances and building materials for new and existing homes through federal tax credits, similar incentives do not yet exist for energy-efficient landscaping. We believe that there is an opportunity to promote a low-cost, natural solution to energy efficiency that requires virtually no energy consumption, that does not produce carbon emissions, and does not experience a sustained decline in efficiency or productivity over its life-cycle but rather provides increasing contribution over time. A solution that has a positive impact on the environment and has been demonstrated to increase the value of a home. The solution? Provide homeowners with an energy efficiency tax credit for planting a properly-sited, site-appropriate tree.

How Energy Savings Are Achieved

According to the U.S. Department of Energy, an eight-foot, deciduous shade tree costs about as much as an awning for one large window, and can ultimately save a household hundreds of dollars in reduced cooling costs, yet still admit winter sunshine to reduce heating and lighting costs. The "Landscaping for Energy Efficiency" report states that a well-planned landscape can reduce an unshaded home's summer air-conditioning costs by as much as 50%.

A 6-foot to 8-foot (1.8-meter to 2.4-meter) deciduous tree planted near a home will begin shading windows the first year. Depending on the species and the home, the tree will shade the roof in 5–10 years. Shading an air conditioning unit can increase its efficiency by as much as 10%."

- During the summer, shading and evapotranspiration (the process by which a plant actively moves and releases water vapor) from trees can reduce surrounding air temperatures as much as 9 degrees Fahrenheit. Because cool air settles near the ground, air temperatures directly under trees can be as much as 25 degrees Fahrenheit cooler than air temperatures above nearby black top.
- In the winter, dense evergreen trees and shrubs can serve as a windbreak to lower the wind chill near a home. One study in South Dakota found that windbreaks to the north, west and east of houses cut winter fuel consumption by 40%. DoE, through its research, found that houses with windbreaks planted on the windward side averaged 25% less fuel consumption than similar, unprotected homes.

The Environmental Benefits of Tree Planting

The environmental benefits of a well managed landscape, and the ecosystems service benefits provided by trees in particular, are well documented. The environmental value of a single tree, in monetary terms, has been documented by the USDA Forest Service. USDA Forest Service Pamphlet #R1-92-100 states that “over a 50 year lifetime, a tree generates \$31,250 of oxygen, provides \$62,000 worth of air pollution control, recycles \$37,500 worth of water and controls \$31,250 worth of soil erosion.”

The Alliance for Community Trees has compiled government research and discovered that:

- Planting one million trees would equal \$3.5 million in annual storm water runoff control costs. Tree canopies and root systems provide a natural filter to our water supply and reduce storm water runoff, flooding and erosion;
- Planting one million trees would equal \$5 million in annual air pollution clean-up costs. Tree foliage reduces particulate matter from the air, including dust, micro-sized metals and pollutants such as ozone, nitrogen oxides, ammonia and sulfur dioxides. Trees sequester carbon dioxide and produce oxygen. Combined with the cooling effect of trees, these processes can have a significant impact on reducing smog and overall air pollution. Every 40 trees removes 80 lbs. of air pollutants annually.

The “REAL” (Estate) Value of Trees

Real estate experts understand the benefits of landscaping in terms of enhancing “curb appeal” for a home that is for sale, and for good reason. In research conducted by the Gallup Organization, it was discovered that landscaping can add between 7% and 15% to the value of a home. Money Magazine has reported that landscaping can bring a recovery value of 100 to 200 percent at selling time. This is in comparison to kitchen remodeling, which brings a 75 to 125 percent recovery rate; bathroom remodeling, a 20 to 120 percent recovery rate; and addition of a swimming pool, a 20 to 50 percent recovery rate. Additional studies indicate that landscaping also speeds the sale of a home by four to six weeks.

As a part of the landscape, a mature tree itself has substantial monetary value for the homeowner. As was reported in REALTOR Magazine, Horticultural Asset Management, who assesses the value of landscape plants, puts the worth of a healthy, 60-foot-tall European beech tree at \$50,000. The USDA Forest Service’s Center for Urban Forest Research has found that a single front yard tree is equals a 1% increase in the sale price of a home.

Policy Recommendation

Directly incentivizing the American consumer to invest in energy-efficient landscaping has the dual benefit of educating the public about the environmental benefits of trees, while allowing a homeowner to realize substantial monetary benefits at the time a home is sold and cost-savings from increased energy efficiency. Meanwhile the neighborhood and community enjoy the environmental and public health benefit of planting a site-appropriate tree. Since the precedent for a tree planting tax credit has already been established for private landowners (Federal Reforestation Tax Credit), industry is comfortable recommending a tree planting tax credit for American homeowners, especially given

consideration to the positive environmental and economic impact during the current economic condition.

ANLA is pleased to offer the following recommendations:

- ANLA recommends providing an energy efficiency tax credit for planting a site-appropriate, properly sited tree at a homeowner's primary residence.
- ANLA recommends that the costs for installation of a tree are included, so that the homeowner has the option of hiring a horticultural services professional to ensure that a tree is appropriately sited to ensure maximum energy efficiency benefits.
- ANLA recommends that only trees of a minimum height (established by the Department of Energy's research as between 6 and 8 feet for the purposes of shading, and a minimum of 3 feet tall for the purposes of providing a windbreak) are eligible, as research has proven that more mature trees will have an immediate impact on energy efficiency and a far greater chance of survival and sustainability than a seedling.
- Finally, ANLA suggests that any arboreal energy efficiency tax credit legislation could be named the "Trees for Reliable Energy Efficiency and Sustainability (TREES) Act of 2009."