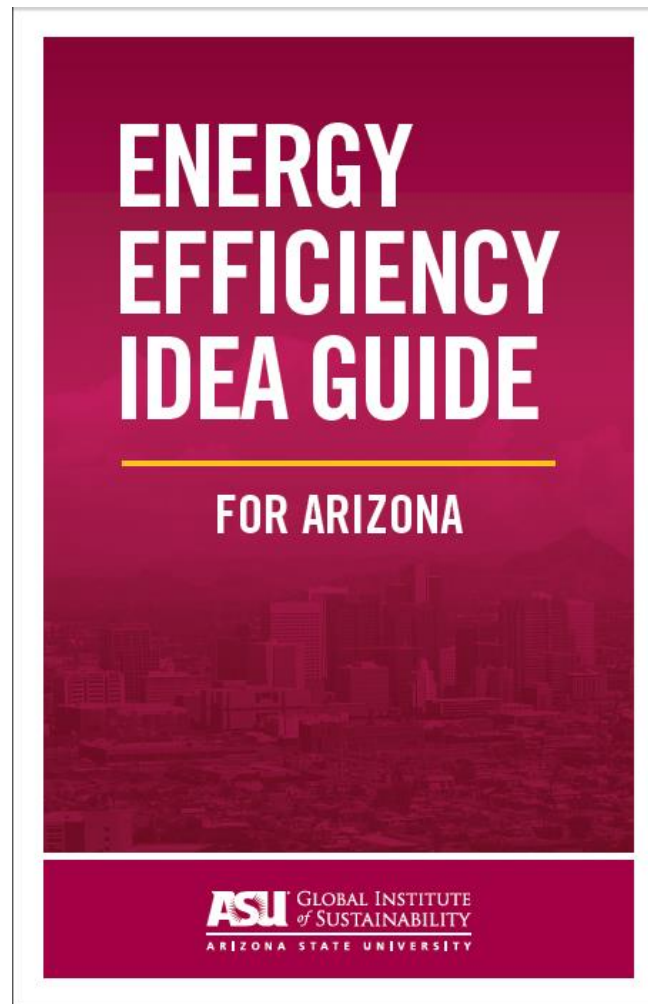


Energy Efficiency Idea Guide

Sustainable Cities Network

May 21st, 2013

Learn Globally, Act Locally



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IDEA 12

ESTABLISH PERIODIC BUILDING TUNE-UPS

A local government or the Arizona State Legislature requires all buildings over a minimum size to undertake a retro-commissioning process every five years to identify problems and re-calibrate energy using building systems.

Purpose

Substantial energy can be saved when building systems are evaluated, maintained and calibrated on a regular basis or when a remodel or change of use alters system needs.

Key Enablers

Local government, Arizona State Legislature

Key Stakeholders

Utilities, Arizona Corporation Commission, EE manufacturers, EE implementers, Commercial utility customers

Challenges

Mandating retro-commissioning can be viewed by some as more government regulation, expense, and intrusion into business, despite its high return on investment and awareness-building potential.

References and More Information

energize.asu.edu > Policy Options > Idea #12

IDEA 14

PROVIDE SALES TRAINING TO CONTRACTORS

A local government sponsors custom sales training for upgrade contractors that combines proven sales techniques with energy efficiency nuances and behavioral research findings.

Purpose

Energy efficiency contracting companies tend to be smaller, with more technical skills than sales and marketing skills. Efficiency Maine provided a custom sales training that raised customer conversion rates from 10% to 60%.

Key Enablers

Local government

Key Stakeholders

EE implementers, Arizona Home Performance with Energy Star, Utilities, Residential utility customers, Commercial utility customers

Challenges

Requires resources. Requires identifying trainers with professional sales skills and knowledge of the EE market.

References and More Information

energize.asu.edu > Policy Options > Idea #14

IDEA 19

ADOPT VOLUNTARY STATE-OF-THE-ART GREEN BUILDING CODES

A local government adopts the International Green Construction Code (IGCC) on a voluntary basis and provides financial or non-financial incentives for developers to comply with it. This can be applied throughout a jurisdiction or in an overlay district. The municipality enjoys lower infrastructure impact from the buildings because of their high performance features (energy, water, sewer, streets, heat island).

Purpose

Energy efficiency is a key feature of green building. The International Green Construction Code (IGCC) also addresses other building impact and performance areas. Some of these, such as cool roofs and water efficiency measures, also have a positive impact on energy savings.

Key Enablers

Local government

Key Stakeholders

Developers, Architects, Landscape architects, Engineers, Contractors, Energy modelers, EE manufacturers, EE implementers, Utilities, Arizona Building Officials, Arizona Corporation Commission, Residential utility customers, Commercial utility customers

Challenges

Financial or non-financial incentives are needed to gain significant voluntary uptake. The architectural & engineering and building trades, as well as code officials, need to be trained. Funding for marketing, education, and awareness are essential.

References and More Information

energize.asu.edu > Policy Options > Idea #19

IDEA 20

ADOPT VOLUNTARY NET ZERO ENERGY BUILDING CODES

A local government adopts the Pima County / City of Tucson voluntary Net Zero Energy Code, possibly the first such code in the nation, and provides incentives for builders to meet the code requirements of zero net source energy.

Purpose

Strong energy codes can help ensure that buildings are built efficiently from the start, with a goal to reach the Architecture 2030 target of Net Zero energy buildings by 2030. Voluntarily reaching for Net Zero energy usage presents leadership that attracts others to follow.

Key Enablers

Local government

Key Stakeholders

Developers, Architects, Contractors, Engineers, Energy modelers, EE manufacturers, EE implementers, Utilities, Arizona Building Officials, Arizona Corporation Commission, Residential utility customers, Commercial utility customers

Challenges

While feasible for many buildings, Net Zero requires expertise, integrated design, resources and on-site renewable energy. Net Zero buildings present problems for utilities whose rate structure is not decoupled. The architectural & engineering and building trades, as well as code officials, need to be trained.

References and More Information

energize.asu.edu > Policy Options > Idea #20

IDEA 21

REWARD BUILDERS OF EFFICIENT NEW HOMES

Similar to some utilities, a local government (or the Arizona State Legislature) rewards homebuilders who build very efficient homes by reducing their development impact fees (or providing them a tax credit) based upon a third-party rating of the energy savings of their homes.

Purpose

Rewarding innovators who take risks in navigating less-charted waters is an established method of encouraging broader progress toward community goals.

Key Enablers

Local government, Arizona State Legislature

Key Stakeholders

Developers, Builders, utilities, EE manufacturers, Arizona Building Officials, energy raters, NGOs

Challenges

Creating niche tax incentives is can be controversial. Impact fees are typically more aligned with water, sewer, parks and roads infrastructure. Policy needs to build in mechanisms to keep performance targets up to date.

References and More Information

energize.asu.edu > Policy Options > Idea #21

IDEA 24

DISCLOSE ENERGY USE DURING RESIDENTIAL REAL ESTATE TRANSACTIONS

A local government or the Arizona State Legislature requires disclosure of a home's previous year actual energy usage during the real estate transaction process, either as part of the property listing or privately during the inspection period. For new homes, energy use estimates are to be derived from third party certifications or from approved energy modeling software reports.

Purpose

MPG ratings are provided to car buyers to assist in understanding the operating costs of their purchase. Disclosure is also a signal that the information is an important consideration during the purchase decision. Homes come with significant operating costs, energy being one of the largest. Disclosure between seller and buyer would promote transparency and create an incentive to reduce the energy operating costs of homes.

Key Enablers

Arizona State Legislature, Local government, Arizona Department of Real Estate

Key Stakeholders

Arizona Association of Realtors, Utilities, Escrow agents, Developers, Builders, Arizona Building Officials, Multiple Listing Service boards, Lenders, Energy raters

Challenges

Variations in rules among neighboring jurisdictions can cause market confusion. How to accommodate properties owned less than a year and properties that have been unoccupied. Development of lease contract solutions for rental properties where the seller does not have access to renter's utility data.

References and More Information

energize.asu.edu > Policy Options > Idea #24

IDEA 33

EDUCATE CONTRACTORS ON ENERGY CODES

A local government requires general and mechanical contractors to acquire education on the latest version of the International Energy Conservation Code (IECC) to secure a building permit for any project that impacts the building envelope or the building's mechanical systems.

Purpose

Ensuring contractors have a minimum knowledge of energy codes, trends and best practices is essential to achieving the goal of reducing energy consumption and costs, and will help develop a better workforce.

Key Enablers

Local government

Key Stakeholders

Arizona Registrar of Contractors, Contractors, Developers, Builders, EE implementers, Residential utility customers, Commercial utility customers, Arizona Building Officials, Educators, Regional association of governments

Challenges

The Arizona Registrar of Contractors typically governs contractor requirements so education rules set by local government may face resistance. Introduces potential delays in permitting. Need to provide adequate phase-in time. Need to train additional trainers and have frequent availability of classes (or online). Determining requirements for which employee positions within a larger contractor need training will be complex.

References and More Information

energize.asu.edu > Policy Options > Idea #33

IDEA 44

CREATE EFFICIENCY COMPETITIONS FOR ORGANIZATIONS

An organization, local government, or utility initiates an energy-saving competition and rewards winners with monetary or other prizes.

Purpose

Competitions at both the team and individual level are effective in encouraging energy efficiency behaviors, drawing on psychological processes of goal setting, public commitment, and social comparison. In particular, team competitions provide social support for behavior change and facilitate development of a group identity around the behavior.

Key Enablers

Commercial utility customers, NGOs, Utilities, Local government

Key Stakeholders

Residential utility customers

Challenges

Under certain circumstances, energy use may return to pre-competition levels once the competition is over.

References and More Information

energize.asu.edu > Policy Options > Idea #44

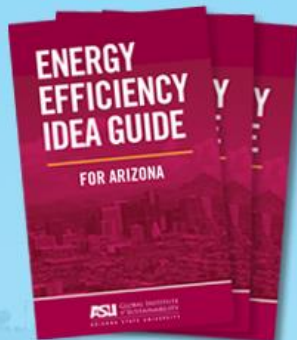


ENERGY EFFICIENCY ON AN URBAN SCALE

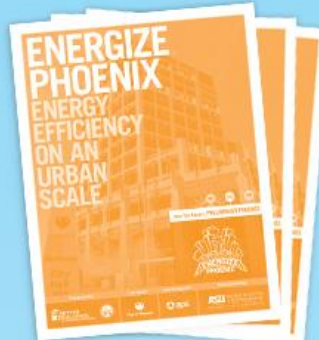
What if the United States could develop a “new” supply of energy?

The nation's commercial and residential buildings currently consume 40% of the nation's primary energy supply, but much of that energy is lost due to inefficiency. Preventing that energy loss makes more energy available to supply other needs.

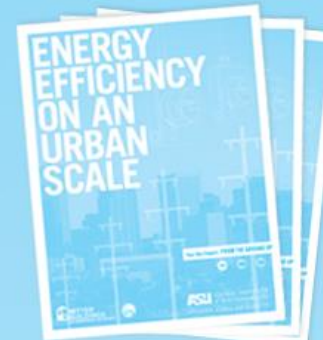
Founded through a 2010 grant from the U.S. Department of Energy, Energize Phoenix aims to eliminate up to 50,000 metric tons of carbon emissions a year, create up to 2,000 green jobs, and transform energy use along a 10-mile stretch of the Metro Light Rail system designated as the Energize Phoenix Corridor.



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Questions?



A R I Z O N A S T A T E U N I V E R S I T Y