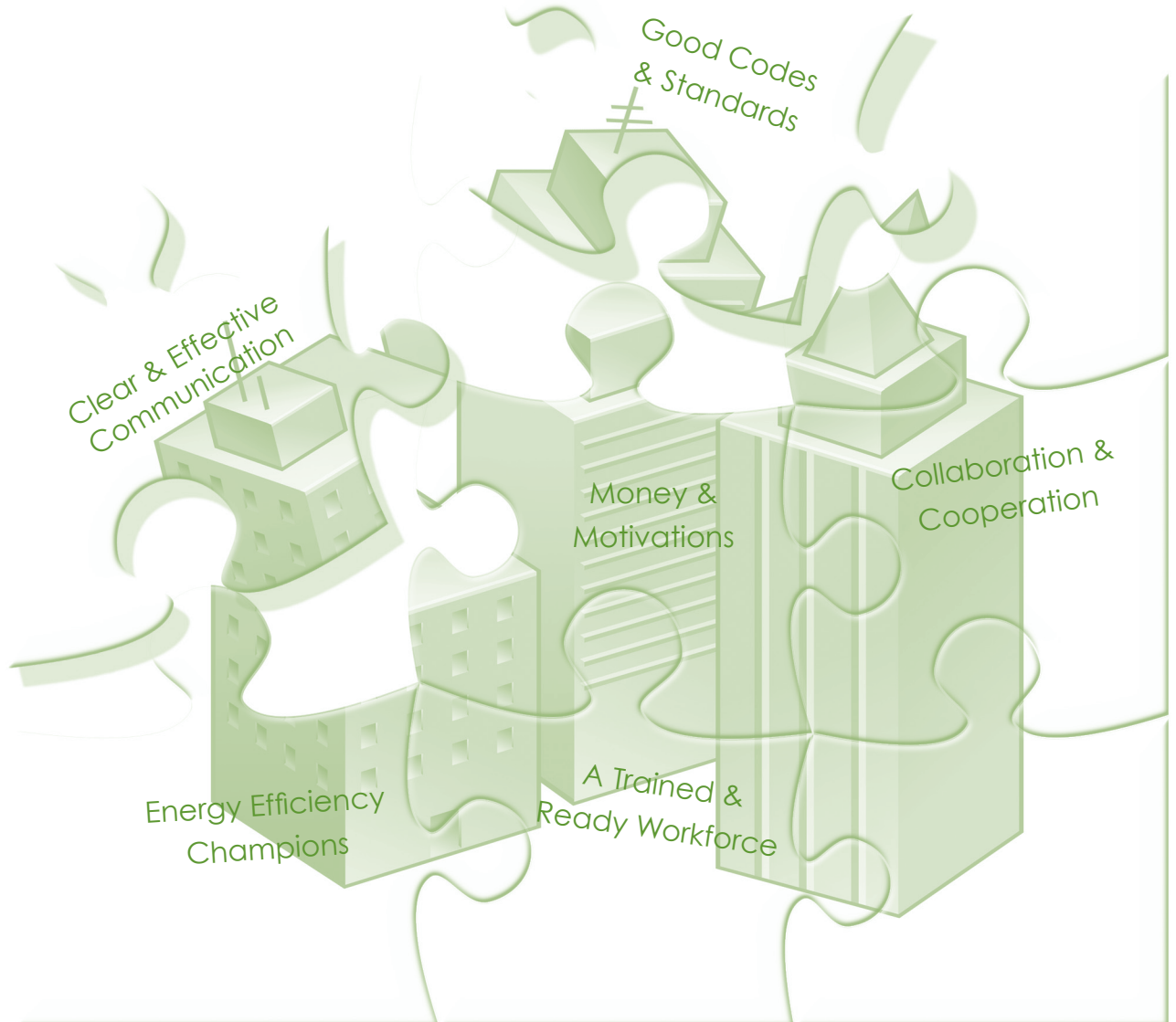


# SOLVING THE ENERGY EFFICIENCY PUZZLE:

## ACHIEVING BIGGER SAVINGS IN THE PACIFIC NORTHWEST



# ENERGY

# EFFICIENCY

The NW Energy Coalition wants you to know YOU have a stake in making our region even more energy efficient than it is. Energy efficiency is the cleanest and cheapest way to meet most of our region's new energy needs and our goals to reduce greenhouse gas pollution. Many organizations throughout the Northwest are already hard at work saving energy. But more can be done. That's what this paper is about: getting over the hurdles to increased energy efficiency and getting to solutions.

We have a lot to lose if we wait and a lot to gain if we act.

We address six keys to increasing energy savings and creating a cleaner, more prosperous future for the Pacific Northwest:

CLEAR & EFFECTIVE COMMUNICATION	4
MONEY & MOTIVATIONS	7
COLLABORATION & COOPERATION	11
GOOD STANDARDS & CODES	12
A TRAINED & READY WORKFORCE	14
ENERGY EFFICIENCY CHAMPIONS	16

## SOLVING THE ENERGY EFFICIENCY PUZZLE: ACHIEVING BIGGER SAVINGS IN THE PACIFIC NORTHWEST

Energy efficiency, according to two recent reports by the NW Energy Coalition, has the potential to supply all of the Northwest's new electricity and half its new natural gas needs through 2020. By mid-century, if we choose this abundance of energy efficiency and renewable energy resources, we can move away from power sources that produce greenhouse gases.

If that sounds too good to be true, it isn't.

Since 1978 the Northwest has saved enough electricity to power three Seattle-sized cities, an amount equal to half the growth in demand over the past 30 years. For that we deserve a moment of thundering applause. Now, to realize a future of clean, affordable and abundant energy, we need an even more stellar second act.

Buildings, because they consume 40% of the nation's energy, offer the biggest savings opportunities. And, wasting less of the energy we already produce brings lots of benefits: avoiding the need for costly new power plants and pipelines, cutting climate pollution and freeing up money for more productive uses elsewhere in our businesses and broader economy.

Ultimately, the challenge is about people making wiser choices about energy use, from everyday consumers to business people to policymakers. It's about helping close the gaps between potential and actual energy savings, between stated intention and real-life action.

We set out to get smarter about how to get at those untapped energy savings.

We posed two questions as we talked with energy efficiency experts across the Northwest, reviewed our efficiency efforts to date, and looked at new ways to capitalize on our efficiency resources:

What stops us from saving more energy in the Northwest?  
How can we overcome these barriers?

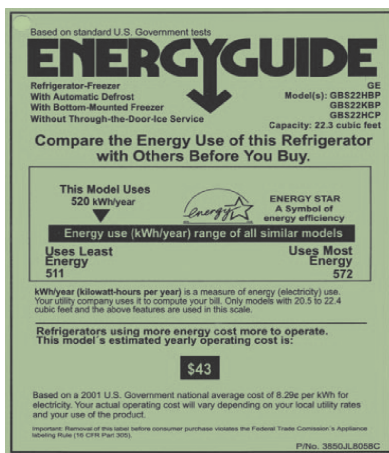
The upside of saving energy is enormous. So, let's get started.

# CLEAR & EFFECTIVE COMMUNICATION

## I. Barrier: A failure to communicate

The language of energy efficiency can be hard to translate. Quick! What's an average megawatt? Do you know what a ton of greenhouse gas looks like?

For many of us, the merits of energy efficiency can be hard to put into plain English. For example, a recent utility press release announced its conservation programs helped customers “reduce their carbon footprint by 450 million pounds of carbon dioxide annually” saving a “combined 274 million kilowatt-hours of electricity and 3.7 million therms of natural gas.” Big numbers, for sure, but what do they mean?



The Energy Guide label:  
Are we making ourselves clear?

On a smaller scale, utility bills don't provide a lot of useful information on energy use. Some use simple bar charts that compare this year's energy use to last year's, but say nothing about whether we are wasting or saving energy. And they all rely on the language of energy experts—kilowatt-hours and therms and heating degree days. It's a language most energy users don't speak, and it's a lost opportunity to make the case for energy efficiency.

It's hard to see, touch or feel energy efficiency. Just as nettlesome as the graph that tells too little about efficiency or the obtuse terminology is the sheer invisibility of energy-saving actions. Saving energy doesn't require the usual trappings of the energy industry like dams, turbines and transmission lines. It doesn't have the iconic wind turbine or

solar panel to “brand” energy efficiency as a clean energy solution and capture the public imagination. It lacks the conspicuousness of a shiny new Prius parked in the driveway.

Efficiency does have the ubiquitous compact fluorescent “twisty” light bulb, of course, but that lonely symbol may actually hinder the cause by suggesting that it's the only path to saving energy.

Too often the images, words, concepts and feedback mechanisms we use to promote energy savings don't motivate people to take action.

## The Solution: Motivate with ideas from real life

**Tell the Northwest story.** Many people don't know that thanks to energy efficiency investments, each of us in the Northwest saves \$125 *each* year, which totals \$1.6 billion across the region. That's money we can spend on something else – or save!

**Tie saving energy to Northwest values.** Efficiency is close to the heart. Like most Americans, we like bargains and we don't like to waste money. Research shows

that, more than most Americans, Northwesterners value the health and beauty of the natural environment and we take pride in being leaders and innovators. Saving energy embodies these values; conveying it in plain terms can help move people to action.

For example, Energy Trust of Oregon, which helps property owners pay for efficiency projects, uses so-called values-based messaging in its marketing. A fact sheet describing a home weatherization project for a Lake Oswego family with an infant talks not about details of insulation and energy savings, but on results a little closer to the heart: “a healthy baby, cozy comfort and welcomed savings on their heating bills.”

**Make the strange familiar.** Drop jargon and unfamiliar technical terms in favor of understandable language that connects with the audience. For instance, research shows that many people aren’t familiar with the terms “CFL” or compact fluorescent lights even though many have them in their homes. They refer to these light bulbs as “twisty” or “swirly” bulbs.

**Make feedback meaningful.** When people get useful feedback about their energy consumption, they tend to pay attention.

That utility bill usage chart? Several utilities, including Puget Sound Energy, are trying a program that takes it a step further, providing customers with energy “report cards” comparing energy use to that of similar but unnamed neighbors. This taps into a strong American tradition: keeping up with the Joneses. If energy use is higher than the neighbors, the customer gets tailored energy saving advice. If energy use is lower than average, they get a star or a smiley face. Early results are showing 2% to 3% savings on average.

Some California efficiency programs have shown that glowing orbs in a home or business that change color with the level of energy use give effective visual cues. Energy Trust of Oregon and some regional utilities have seen promising results from pilot programs testing electronic monitors that give customers real-time information on their energy use.

**Figure out what—and who—moves people.** Some people are inspired to act by what they might gain; more comfort, more money, more valuable real estate.



Others—lots of people, according to fresh market research—are motivated more by what they might lose than by potential gains. A common “aha moment” for people investing in efficiency goes like this: “As soon as I realized \$200 a month was leaking through the skimpy insulation in the attic, I fixed the problem.”

**Use sources people trust.** Regardless of what motivates them, people are most persuaded by people and institutions they trust. The Northwest Energy Efficiency Alliance (NEEA), a partnership of utilities, governments and public-interest groups, found the best way to communicate energy efficiency to the region’s largest

## A Solution’s Story

New technology in the form of “smart meters” holds great promise for providing customers actionable information on their energy use. Italy’s largest electric utility, Enel, converted 27 million customers to smart meters, allowing customers to monitor and manage their power consumption over the internet. The total annual savings clock in at a stunning \$710 million —savings that are shared with ratepayers. Closer to home, several Northwest utilities like Tacoma Power and Seattle City Light are accelerating plans to install smart meters, responding to federal dollars in the American Reinvestment and Recovery Act for advanced meter infrastructure. Smart meters not only have the capability of providing consumers direct feedback on energy use, they also help utilities manage peak demand to avoid blackouts and provide nearly instantaneous information about outages. Ensuring that utilities implement solid consumer protection policies will help this new technology gain widespread acceptance.

commercial office landlords was through their own trade organization. NEEA joined with the Building Owners and Managers Association (BOMA) to conduct an energy efficiency training program. The message connected, making the program one of BOMA’s most popular ever. BOMA says it is on target to reach 2,000 landlords with the potential to cut energy use by 10 % and costs by \$400 million over the next three years.

An energy efficiency lending program called Green Street Lending, co-sponsored by Umpqua Bank and Energy Trust of Oregon, relies heavily on trade professionals with established business relationships to refer prospective borrowers. Businesses learn about the availability of financing from the people who service their HVAC equipment or lighting systems, often just at the right time when they need to upgrade outdated systems.

**Different audiences respond to different messages.** Utilities doing market segmentation studies are finding that one size does not fit all when it comes to promoting energy efficiency. For example, Puget Sound Energy found that about a third of its residential customers respond to messages about climate protection and the environment; an equal number are turned off by the “green” message, but respond much more favorably to pocketbook messages.

In making the case for energy efficiency to political leaders and labor, the most compelling messages are economic benefits like local, good paying jobs. Who wouldn’t be convinced by that message when learning, for example, that Oregon’s



clean energy tax incentives, in addition to saving energy, created more than \$616 million in investments and wages and more than 1,700 jobs in two years?

**Practice conspicuous conservation.** Find ways to make efficiency visible, even conspicuous! The Energy Star logo has become an effective marker for the efficiency “brand.” Washington’s construction industry has developed the “Built Green” label, with a significant energy efficiency component, as an effective tool for showing off sustainable practices. Household and business participants in the Corvallis, Oregon, 2008 Energy Challenge showed their support for saving energy with yard signs.

**Respect human nature.** Energy planners estimate we can increase energy savings by as much as 25% through individual behavior changes, from buying decisions to consumption habits.

But to get there, we have to be realistic about human nature. The way people *really* behave in relation to saving energy – not just how we *want* them to behave – is important. Research tells us that people don’t generally calculate the costs and benefits of energy when living their lives. Instead, they rely on what’s familiar and convenient. We are also influenced by what’s trendy and by what our peers and neighbors are doing. So, to get more of us to be energy champions—whether we’re creating a utility incentive program or selling Energy Star TVs—we need to go beyond the financial benefits and push other buttons like the desire to belong (Everyone’s doing it!) and the quest for convenience (Turn off the whole room with a single power strip!).

## MONEY & MOTIVATIONS

### II. Barrier: Financial signals of energy efficiency send mixed messages

**Our low-cost power sends a confusing signal.** Sometimes it seems the low price of electricity tells us it’s just not worth saving! It turns out the Northwest’s low energy prices—thanks to a low-cost, long-established hydroelectric system and big efficiency gains that have avoided many expensive new power plants—are a stumbling block when it comes to achieving greater efficiency. On top of that, a few Northwest utilities still have flat rates that charge the same per kilowatt-hour no matter how much gets used, offering little price incentive to cut waste.

**The bill-payers are often not the decision makers on energy usage.** Building owners or managers, for instance, don’t see benefit in saving energy because they don’t pay the energy bill while the person who does pay the energy bill doesn’t have any decision making authority to invest in energy efficiency. Split incentives, as they are commonly called, come in many forms:

- Building developers often sell buildings upon completion, and therefore tend to focus on minimizing up-front building costs rather than reducing long-term operational expenses that over time can exceed the costs of construction.

## Financial metrics for buildings with energy efficiency ratings vs. those without

Building Type	Occupancy Rate	Rental Rate per ft.	Sale Price per ft.
Energy Star Certified	91.5%	\$30.55	\$288
Non-Energy Star Peers	87.9%	\$28.15	\$227
LEED Certified	92.0%	\$42.38	\$438
Non-LEED Peers	87.9%	\$31.05	\$257

Source: CoStar Group, "Commercial Real Estate and the Environment"; All Figures are as of first quarter 2008

- A landlord owns the building but the tenant pays the energy bills, largely eliminating the incentive to cut energy waste with upgrades to lighting, heating and cooling systems.

- Manufacturers of always-on electronic devices have little reason to be concerned about the energy their products consume; they don't pay the bills, consumers do.

- Similarly, utilities may be conflicted about energy conservation programs. Investor-owned utilities worry because their profits are often tied to selling more electricity or natural gas and public utilities worry that they have to raise rates to make up for sales lost to increased energy efficiency.

**Finding upfront money** and time to invest in efficiency upgrades is often difficult, for both homeowners and businesses. As important as saving money is, savings are in the future and people aren't likely to make new investments when life events or business challenges get in the way. Utility programs and federal tax credits can help pay the cost of energy saving projects but only after the fact- they still require upfront capital.

**Some tax breaks miss huge sectors.** Federal tax incentives to save energy are nice – if you can get them. A huge number of buildings are owned by tax-exempt organizations like churches, schools, governments and non-profit hospitals.

## The Solution: Align the financial interests

**Focus the message on energy bills, not rates.** Investing in energy efficiency lowers energy bills – and bills are what people actually pay. Most of us don't know what our energy *rates* are (i.e., what we pay per kWh or per therm) but we do know if our energy *bill* goes up or down.

**Incorporate energy efficiency into leases.** So-called "green leases" can rally both landlords and tenants in support of energy efficiency in the commercial sector. The language of these leases varies, but a common theme is to require landlords to improve efficiency and to require bill-paying tenants to share the savings with the landlord to help pay the cost of the upgrades. BOMA offers a guide to green leasing for sale at BOMA.org.

**Educate landlords.** Realizing that energy efficiency increases the value of commercial and income property can also help solve the real estate split incentive. Buildings built and operated to higher energy efficiency standards are easier to lease



as tenants become increasingly concerned about energy costs and environmental sustainability. A 2008 CoStar Group study found that buildings with the U.S. Green Building Council's LEED rating lead to higher rents, lower operating costs and, as a result, higher asset value. We need to tell stories like the one below.

Developer Jonathan Rose said in 2006 that his goal in retrofitting the Joseph Vance and Sterling buildings was to make them the most energy efficient old buildings

## A Solution's Story

Unico, a Seattle commercial property owner and manager, recently began using green lease language (adapted from the BOMA Green Lease Guide) with each new tenant. Basic tenant requirements include purchasing only Energy Star qualified office equipment, and conserving energy day-to-day by taking simple actions like turning off unneeded lights. "Green sustainability fairs" hosted in office building lobbies aim to keep tenants inspired to participate, with signage providing periodic updates on new initiatives such as lighting or mechanical upgrades.

in downtown Seattle. And he said they'd make money, too. In 2009, Rose told The Seattle Times, the projects – a combined 120,000 square feet of office and retail space - have exceeded his expectations, both environmentally and financially.

Occupancy is up. So are rents. And, after a \$3.5 million investment in new systems, fixtures and other improvements, energy consumption has dropped significantly. Heating costs alone have dropped 43%.

**Make it easier for utilities to invest in energy efficiency.** Since natural gas and electric utilities usually cover most of their fixed expenses through sales, selling less can make it harder for them to cover all costs and harder to support efficiency programs. But there are a variety of tools available to regulators to financially reward utilities that invest smartly in energy efficiency – tools that balance the interests of utility shareholders and customers.

- “Decoupling” energy sales from a utility’s earnings—allowing a utility to maintain revenue levels *and* aggressively pursue low-cost resources like efficiency—is one strategy utility regulators are trying.
- Regulators can also allow utilities a rate of return on energy efficiency investments similar to capital investments like transmission lines and meters.
- Still another approach is to allow a utility more profit if it meets its savings targets, imposing substantial penalties if it does not. (For one utility, this system made all the difference because, for the first time, energy efficiency was in the boardroom. All of a sudden the corporate suite was invested in reaching conservation targets!)

Any of these approaches can be effective. Regulators will respond more positively to utilities that present thorough documentation that investing in energy efficiency produces supply and reliability benefits at costs as good or better than traditional capital investments.

**More utilities need to move past outdated views of energy efficiency.** Utilities are by nature conservative (that's a good thing because we want our energy supply to be VERY reliable.) But with more than 30 successful years of saving energy and money here in the Northwest it's time to retire lingering concerns at some utilities about the reliability of energy efficiency as a resource. After all, customers like saving energy and money. We've never heard of a utility *over*-investing in energy efficiency!

**Be creative in financing energy efficiency.** A host of new approaches to paying the up-front costs of energy efficiency investment are gaining traction. For example:

- Commercial and institutional energy users are increasingly turning to energy services companies, or ESCOs, that know how to get the best utility incentive program for their clients. They develop, install and help finance efficiency projects; typically they guarantee the project energy savings. These services are bundled into the project's overall cost, and repaid through the saved energy dollars.
- Contractors are partnering with utilities to deliver incentives in new ways. In Boise, Graybar Electric worked with Idaho Power to help the Red Lion Hotel overcome a lack of capital by fronting the cost of more efficient lamps and ballasts. Hotel staff did the labor. Idaho Power paid Graybar its conservation incentive payment, enough to cover Graybar's costs plus a reasonable profit. Red Lion will realize cost savings of about \$2,600 per month with virtually no out-of-pocket expense.
- More utilities are offering trade allies like electrical and heating-and-cooling contractors financial sweeteners when they sell high-efficiency equipment and provide top-quality installation. For example, Tacoma Power guarantees payment to weatherization contractors, taking on the role of collecting payments from property owners. The key to trade ally programs is to make them as easy as possible for retailers and contractors, in recognition that promoting efficiency programs and services takes time and money.
- Oregon's Department of Energy has an innovative method for bridging the incentive gap for tax-exempt property owners, allowing organizations like churches and non-profit hospitals to sell their energy efficiency tax credits to private-sector taxpayers.
- Financial institutions are doing some creative thinking, too. Shorebank Cascadia is partnering with the City of Portland on a pilot program in which property owners will pay back low-interest loans on energy saving projects through a separate charge on their monthly utility bill. If the home is sold, debt and benefits transfer to the new owner.
- Oregon's Umpqua Bank has joined with Energy Trust of Oregon to offer reduced-fee loans specifically for energy efficiency projects; they rely on trusted trade allies to refer customers to the program.

- In New England, the electricity delivery company National Grid has gotten over the money barrier confronting small business by offering financial incentives that provide instant positive cash flow. The utility pays up to 70% of the costs to replace working equipment with a more energy efficient model and finances the remaining 30% interest-free for up to 24 months.

## COLLABORATION & COOPERATION

### III. Barrier: A patchwork of programs, policies and messages

**Regionally inconsistent messages** and a patchwork of utility and government programs get in the way of widespread energy efficiency awareness and economies of scale in implementing the smartest programs.

Admittedly, coordinating energy efficiency programs in our region can be daunting. The Northwest has more than 125 electric utilities—small, big, urban, rural, publicly owned, and investor-owned. And we have six natural gas utilities, three of which combine electricity and natural gas services. Each has unique needs, strengths and cultures. And they all have a responsibility, grounded in state statute and overseen by regulators, to quantify the savings their energy efficiency program spending produces.

When you add in other energy agencies, state and local governments, water utilities, energy services companies, trade and public interest groups and the pressure of issues like economic recovery and climate change, it becomes even tougher to find the right recipe to move everyone in the same direction at the same time.

**On a smaller scale, commercial building projects** face a similar challenge in moving designers, developers, financiers, builders and owners together toward greater energy efficiency. We know integrated building design is key to building the smartest and most energy efficient buildings that deliver savings long into the future. But we are still missing opportunities: shortsighted focus on cutting construction costs or an economic downturn too often knocks smart, long-term efficiency commitments out of the equation.

### The Solution: Increased coordination and collaboration

**We need to coordinate in support of energy efficiency at all levels.** Fortunately, the Northwest has some great models to build on. Ten years ago a regional group of utilities, governments and energy efficiency advocates realized that coordinated action by a host of players can develop markets for energy efficiency technologies and products much more quickly than individuals acting alone. They formed the Northwest Energy Efficiency Alliance (NEEA) and the results have been impressive. Thanks to NEEA, the Northwest is a national leader in the adoption of energy-efficient products like high-efficiency computers, washing machines and lighting systems, and in the use of strategic energy management practices in its hospitals, schools and businesses.

Other examples of collaboration abound:

- In the Puget Sound region, a group of water, gas and electric utilities pulled together in 2007 to distribute 79,000 water-saving showerheads and faucet aerators. The hot water savings cut electricity, gas and water waste.
- In Seattle, thanks to a 20-year partnership of electric utilities from Portland to Anchorage, the Lighting Design Lab showcases the latest high-quality energy efficient lighting systems and advises professionals on their use.
- Every two years, the Electric League, Seattle City Light, Puget Sound Energy and Snohomish PUD collaborate on a one-day energy efficiency conference, attracting hundreds of energy professionals to learn about the most current technologies and strategies.

**Design buildings to be efficient from the start.** When it comes to integrated design in commercial construction – essentially improved coordination and collaboration by all the critical players involved in developing, designing and building new large buildings – we need to do better. Some developers like Portland-based Gerding-Edlen are succeeding with integrated design even during the recession. Its 540-unit luxury condominium project in Bellevue, designed to LEED Gold standards, is the latest in a series of integrated-design projects that will deliver substantial energy efficiency for future owners.

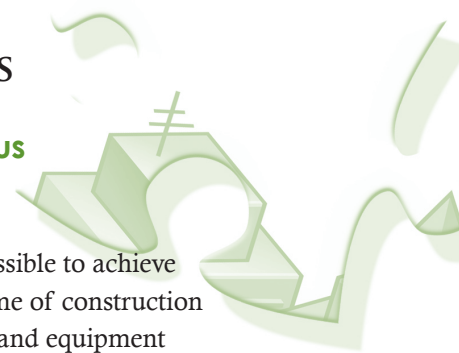
BetterBricks.com, NEEA's commercial building initiative, says the project owner remains the key to success: If the money behind a project makes energy efficiency central, developers, designers and builders will fall in line

## GOOD CODES & STANDARDS

### IV. Barrier: Codes and standards need continuous improvement

Once a new building is constructed, it's expensive and often impossible to achieve the energy efficiency that can be built in so economically at the time of construction – an opportunity we can't afford to lose. Standards for appliances and equipment set the bar for minimum efficiency levels and are increasingly important since more and more of our energy use in buildings comes from appliances and equipment. The beauty of energy codes and equipment efficiency standards is that the savings are pretty much hard-wired; done right, they require no additional consumer effort while delivering predictable savings.

Good codes and standards also help fix one of the major barriers to saving energy – the “hassle factor.” Household appliance decisions are often made in a rush when



water heaters, furnaces or refrigerators break. Building engineers replace broken equipment as quickly as possible and may not spend time researching energy consumption. Good standards mean only energy efficient appliances are available. Voila! No research required!

Of course, there are obstacles to the effectiveness of codes and standards.

**Code changes can mean some additional costs.** When Washington and Oregon strengthened their residential energy codes to require more efficient windows, the cost of building a new home went up \$400 on average. Commercial lighting code changes caused a similar cost increase. Fortunately, the market has caught up to the code, so there's no longer any price differential.

"Energy efficiency can be improved very quickly. Appliance standards, ka-BOOM, can be had right away."

Secretary of Energy Steven Chu  
in National Geographic magazine

**Technology is changing quickly – making it hard for codes and standards to keep up.** Televisions, for instance, have evolved to energy intensive flat panels and now consume about 43% more energy than conventional tube TVs (albeit in part because they are on more and they are bigger.) TVs now account for about 10% of household energy use; only California is nearing energy efficiency standards.

### **Compliance is good . . . and should be better.**

According to the Northwest Energy Efficiency Alliance, energy code compliance in Oregon and Washington buildings is an impressive 85%—among the best in the country. But that also means that we're losing out on important savings in the 15% of buildings that are out of compliance.

And, it's not a given that the region will maintain good compliance rates. With every code change, it takes time for building designers and code officials to learn the ins and outs of new codes. Some smaller jurisdictions find they don't have the resources and technical expertise to adequately review large and complex projects. In addition, funding for educating and training the building industry and code enforcement officials isn't always certain. In Washington, funding for the State Building Code Council – responsible for developing, adopting and evaluating all state building codes – is provided by building permit fees that haven't increased in 27 years.

**Are new regulations ever easy?** Whether the subject is energy codes or federal efficiency standards, our political culture tends to resist regulation. Resistance is usually about who pays and who benefits: tighter rules can mean new costs to builders or manufacturers while end users reap the benefits through lower energy bills. Sometimes the resistance is about costs, and sometimes the barrier is a combination of inertia, an anti-regulatory environment and a lack of understanding of the longer-term economic and environmental benefits of energy efficiency.

## The Solution: Facts, enforcement and a little persuasion

**Confront resistance with facts.** One regional code expert says the most effective strategy is to have solid research that quantifies the performance of specific measures, with detailed cost-benefit analyses. Just as important is conducting evaluation studies of previous code changes. Not only can evaluations improve current energy code delivery and cut costs, they can bolster arguments for future code improvements.

The Northwest Energy Efficiency Alliance is a good resource for local and state governments seeking help with energy codes and appliance efficiency standards. The Appliance Standards Awareness Project is a helpful resource for information on federal and state efficiency standards.

**Make compliance a reality.** Cities and counties are responsible for energy code enforcement, so officials can bolster energy savings by directing their building departments to make energy code compliance a priority. NEEA has made codes a high priority, offering education and training for building professionals and officials on existing codes, as well as participating in the state code adoption processes across the region.

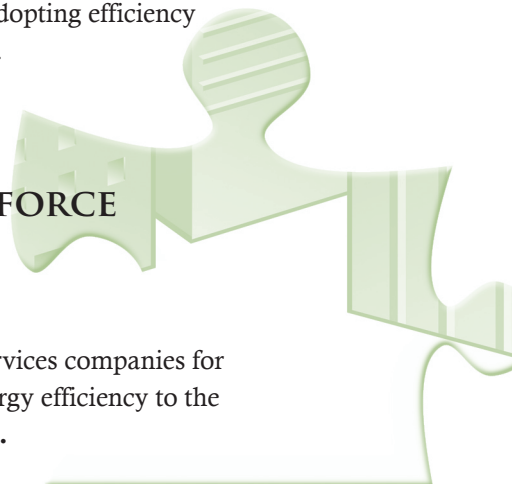
Most utilities are counting on energy efficiency to help meet load growth so they also have a stake in good energy code compliance. There are a variety of ways that utilities can help make a difference: for example, Seattle City Light helps pay for energy code experts in Seattle's building department. And in the Puget Sound region, some utilities are discussing how they might join forces to work together with local governments and builders so there's a better understanding of the importance of the energy code.

**Adopt appliance and equipment energy efficiency standards for more products.** Appliance and equipment standards help align consumer and manufacturer interests. From refrigerators to heat pumps, federal appliance and equipment standards are responsible for 20% of overall savings from all energy efficiency policies adopted from the 1970s to 2000, according to the National Commission on Energy Policy. At least 25 new federal energy efficiency standards for consumer lighting, residential furnaces and household appliances are slated to be revamped over the next four years. And Northwest states can follow California's lead in adopting efficiency standards for new TVs—the next great energy saving frontier.

## A TRAINED & READY WORKFORCE

### V. Barrier: Good help is hard to find

Ask managers at utilities, governments and private energy services companies for a list of the biggest obstacles they face in delivering more energy efficiency to the region and they all include **the lack of a qualified workforce.**





While the federal government is putting unprecedented amounts of money into efficiency projects and the popular media is touting the benefits of efficiency as never before, the efficiency workforce is having a hard time keeping up. Portland-based PECO, which delivers energy efficiency programs for a number of utilities, found itself with more than two-dozen unfilled positions at a time when Oregon's unemployment rate was second highest in the nation.

Creating an educational system to train energy efficiency workers is made more difficult because the organizations in the best position to address the need often don't coordinate. They include utilities, high schools, two- and four-year colleges, organized labor, state workforce coordinating boards, community-based and non-profit organizations, and private training programs.



Although not unique to “green jobs,” breakdowns in workforce training at the high-school level also contribute to the problem of not enough qualified workers: too many students lack work-ready fundamentals like basic math, communication and interpersonal skills and workplace discipline. Union officials say trainees often wash out of apprentice programs simply because they don't show up when required.

Another aspect to the problem is that rural areas often don't have access to energy professionals or energy equipment vendors and, given the demands they already have, it's not economical for those in the urban areas to visit the smaller and more distant communities.

### The Solution: A bigger, better efficiency workforce

**Create an energy efficiency *industry*.** A great place to start solving this problem, according to one respected senior utility manager, is to treat energy efficiency as an industry just like information technology or health care, with a concentrated field of study and rational paths for career advancement.

The region is moving in that direction with commitments to define energy efficiency jobs, distinguishing them from less well-defined “green economy” jobs, and establishing classifications and skill standards. The Washington Department of Community, Trade and Economic Development, for example, issued a report to the governor and legislature in early 2009 that includes specific steps for training and energy-efficiency workforce. Although the current recession has slowed funding, ultimately this and similar initiatives throughout the region are expected to lead to the development of training programs and curricula that can be taught at technical, two- and four-year colleges.

Specific areas where focused energy efficiency training is needed include mechanical engineering; building commissioning; heating, cooling and ventilation specialists; program management; and skilled labor positions in construction, metalworking and pipefitting.

Organized labor in Washington and Oregon is engaged in energy workforce training programs at secondary and post-secondary levels through the Apollo Alliance, a coalition of labor, business and public interest organizations working for good jobs and a clean and secure energy future.

**Provide more training and education.** Students of the Northwest Energy Education Institute, part of Oregon's Lane County Community College, earn two-year degrees in Energy Management, learning the skills necessary to evaluate and recommend energy solutions that result in greater energy efficiency and cost savings. To meet the growing demand, the Institute has expanded enrollment from 30 to 90 students in three years, and, starting in fall 2009, will offer a new certification program for Resource Conservation Managers. The Institute also provides custom learning opportunities for practicing professionals throughout the Northwest.

The Center for Excellence in Energy Technology at Washington's Centralia College has taken on the role of coordinating higher education's response to the efficiency workforce shortage. It is assessing the adequacy of existing programs in Washington, Oregon, Idaho and Montana and will come up with recommendations for creating and expanding a coordinated system of energy efficiency education.

The Seattle-based Moontown Foundation is one creative approach to tackling the challenge of unprepared youth. Moontown recruits young people from underserved communities and links adult basic education with energy efficiency job training skills that can help meet the demand for qualified home energy workers.

## ENERGY EFFICIENCY CHAMPIONS

### VI. Barrier: Saving energy isn't in the job description

Energy efficiency on the scale that is possible and necessary to meet the region's growing energy needs doesn't happen by itself, or even because a utility or government has a program to spur it along. For most people – whether at home or at work – saving energy is only one item on a long list of things to do, if it's on the list at all.

Saving energy is rarely in anyone's job description. It's not surprising since the cost of energy, while controllable, generally represents only a small percentage of overall operating costs. And while saving energy adds to the bottom line just like new sales revenue, it's usually not rewarded in the same way. When salespeople sell more, they get paid more. When a facility manager shrinks the light bill, the savings



don't necessarily stay with the facilities department. That manager might not feel so motivated the next time. And, finally – there is the boss. It's a major barrier when saving energy isn't a priority for the business owner or top executive.

## The Solution: Leadership!

**Put someone in charge!** Some pioneering programs provide technical and/or financial support for dedicated energy managers in large organizations. These people are *hired* to be champions of energy efficiency. The best ones deliver not only near-term energy and cost savings, but long-term culture change as well.

- BC Hydro provides funds for organizations to help create a culture that promotes and supports energy efficiency. Participants create a variety of approaches within their organizations to promote saving energy: mascots (the aquarium's "Earl the Electric Eel"), green leases, lunch-and-learns, competitions, websites, blogs and more. Pilot program results are promising — one large health-care organization reported 13% savings.
- Puget Sound Energy's innovative Resource Conservation Manager (RCM) program saved as much electricity in 2007 as 5,500 typical homes use in a year by installing energy managers in organizations to cut energy waste from multiple angles – changing employee behavior, improving operation and maintenance practices and managing bigger improvements from lighting to heating and cooling. The program helps fund energy manager salaries for up to two years in school districts, municipalities and businesses. After that, the position has typically saved enough in energy costs to sustain the salary. PSE is experimenting with partnering with community-based organizations to house managers devoted to multiple local businesses.
- The Oregon Department of Energy and Washington State University Extension Energy Program both provide technical and networking support for resource conservation managers. Case studies show even small organizations can benefit: Oregon's Crook County School District cut 15% off its annual utility bill—\$95,373—and used the savings to restore funding for two teaching positions.

**Unleash the "Green Team."** BC Hydro's Team Power Smart works with employees of its larger customers to catalyze a culture of energy efficiency in their workplaces. After a startup training by the utility, the team of champions—people from throughout the participating organization, including an executive or two—gets the message out on goals and behavior changes, with a major emphasis on recognizing successes big and small. One participant, a small health district, reported 23% energy savings from simple changes like turning off lights and computers when not in use.

**Empower the facilities managers.** If you care about energy waste and you're in a position to give your building operators a seat at the decision making table, do it. At Lake Washington School District, the facility director is part of the management

team. He made a commitment that the district would be the most energy efficient in the state – and he’s making it happen. In 2007, overall energy use was down by nearly 9%; new school buildings are designed and built to be energy efficient. Rachel Carson Elementary, opened in 2008, was designed to exceed state energy code requirements by 35%, and it’s likely that its natural ventilation system will serve as a model for other new school designs.

**Make saving energy and dollars a management priority.** In 1995, Providence Health & Services, a Seattle-based operator of hospitals and other health facilities, created an executive level energy department to manage energy as the substantial controllable expense it is rather than the nearly invisible fixed cost it had been. With annual energy savings approaching \$4 million by 2008, Providence has found what is essentially a new revenue source.

**Encourage political leadership.** When elected officials decide that government should lead on energy policy, they can make a big and lasting difference. For example, three decades ago the City of Seattle chose energy efficiency over nuclear power to meet City Light’s load growth. That decision spawned an energy efficiency culture and industry in the Northwest that still leads the country. More recently, when elected leaders in Oregon and Washington made commitments for their jurisdictions to be leaders in sustainability and energy efficiency, the Northwest became the leader in the number of design professionals and buildings boasting the Leadership in Energy Efficiency and Design (LEED) certification.

It is critical to inform elected leaders that using less of what we already produce is far cheaper and cleaner than building new power plants or pipelines.

**Change mindsets about energy.** In the end, energy efficiency wins or loses based on individual choices made by all of us, the people who use energy. And changing behaviors and mindsets is never easy.

To achieve the levels of energy efficiency that leads to a clean and affordable energy future in the Pacific Northwest, energy efficiency must become the *default* decision—not something that requires consumers to “opt in” or requires a lot of thinking or doing.

The best way to change mindsets is to show success. And the path to success runs through the solutions presented throughout this paper. That means being a smarter consumer, fostering more creative financing, involving more trade allies, creating better codes and standards. Educating consumers about the benefits of energy efficiency and demonstrating the benefits of energy efficiency are key and we need to take every opportunity to make the case.

## WE CAN DO IT!

**So, it's a paradox.** Despite decades of energy savings success, despite most energy planners and utilities recognizing energy efficiency as the cheapest, fastest and cleanest energy resource available, studies (and our experience!) show significant, untapped energy efficiency potential remains in the Pacific Northwest. In this paper we've touched on the major hurdles and solutions to fully capturing those energy savings:

CLEAR & EFFECTIVE COMMUNICATION

MONEY & MOTIVATIONS

COLLABORATION & COOPERATION

GOOD CODES & STANDARDS

A TRAINED & READY WORKFORCE

ENERGY EFFICIENCY CHAMPIONS

**We have 30 years of energy saving experience.** We have support from elected leaders in every Northwest state and in the nation's Capitol, which means we can advance policies to accelerate efficiency. We have strong and successful regional players like the Northwest Energy Efficiency Alliance and the Northwest Power and Conservation Council to continue to guide those policies and help implement them in the real world. We know more than ever about how to motivate people to make more efficient energy choices. Leaders are moving in the right direction and the popular media is finally paying its respects.

Now, it's up to us. *Let's do it!*



NW Energy Coalition  
**EFFICIENCYWORKS!**

The NW Energy Coalition is an alliance of more than 100 environmental, civic, and human service organizations, progressive utilities, and businesses in Oregon, Washington, Idaho, Montana, Alaska and British Columbia. We promote development of renewable energy and energy conservation, consumer protection, low-income energy assistance, and fish and wildlife restoration on the Columbia and Snake rivers.

This report was prepared by NW Energy Coalition staff Kim Drury and John Healy and Linda Dethman of Dethman & Associates. It was produced as part of the Coalition's *Efficiency Works!* campaign.

### **NW Energy Coalition**

811 1st Ave, Suite 305  
Seattle, WA 98104  
(206) 621-0094

[nwenergy.org](http://nwenergy.org)  
[efficiencyworks.org](http://efficiencyworks.org)

September 2009  
(Layout updated February 2011)