

# CLEAN ENERGY WORKS OREGON FINAL TECHNICAL REPORT

DECEMBER 2013



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# CLEAN ENERGY WORKS OREGON FINAL TECHNICAL REPORT

Award Number: DE-EE0003565

BBNP Name: City of Portland

Project Title: Clean Energy Works Oregon (CEWO)

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# EXECUTIVE SUMMARY

In April 2010, the City of Portland received a \$20 million award from the U.S. Department of Energy, as part of the Energy Efficiency and Conservation Block Grant program. This award was appropriated under the American Recovery and Reinvestment Act (ARRA), passed by President Obama in 2009. DOE's program became known as the Better Buildings Neighborhood Program (BBNP).

The BBNP grant objectives directed the City of Portland Bureau of Planning and Sustainability (BPS) as the primary grantee to expand the BPS-led pilot program, Clean Energy Works Portland, into Clean Energy Works Oregon (CEWO), with the mission to deliver thousands of home energy retrofits, create jobs, save energy and reduce carbon dioxide emissions.

In June 2010, the City of Portland filed to incorporate CEWO as an independent nonprofit organization. CEWO subsequently received an \$18 million sub-recipient award from BPS.

The original idea behind Clean Energy Works Portland was to test whether Portland residents would be more likely to adopt energy efficiency upgrades if they were offered a comprehensive package of benefits and services. The package included: low-interest, long-term financing and rebates to cover the up front costs; free energy assessment; assistance from an independent energy advisor; and the convenience of repaying monthly loan obligations through the heating utility bill. These features and benefits remain at the core of CEWO's offering today.

Though the primary focus of Portland's BBNP grant was to transform the residential market for whole home energy retrofits through CEWO, DOE also directed Portland to deliver large and small commercial energy efficiency retrofits. As a result of CEWO's participation in Cool Schools, over a million square feet of public school space were upgraded for energy efficiency. CEWO catalyzed energy retrofits in the affordable multifamily sector by supporting MPower, another multi-sector collaborative that spun out of the Portland pilot.

BPS spent considerable resources investigating the small commercial retrofit market to gauge the most effective interventions. This work resulted in the short-lived but high-impact Bucks for Buildings campaign of 2012-2013.



From the Portland pilot until this moment, Clean Energy Works has been an audacious, triple-bottom line endeavor. At the end of the grant period, Portland and CEWO are proud to present the Department of Energy with a robust set of results and accomplishments. CEWO grew demand for energy efficiency across the state and retrofitted over 3,000 Oregon homes. CEWO substantially elevated and helped professionalize the Home Performance with Energy Star industry in Oregon. CEWO created hundreds of jobs in the hard-hit building trades industry. CEWO put people of color and women to work in jobs that pay family-supporting wages and offer health benefits. CEWO has saved energy, avoided carbon emissions and made thousands of Oregon homes and homeowners more comfortable.



## Highlights

The City of Portland and CEWO together have accomplished a great deal in three years. This collective effort has resulted in the completion of more than 3,000 retrofits and the creation of hundreds of jobs. The innovations necessary to these accomplishments took place on several fronts, most notably in lending and finance, driving demand and workforce equity.

CEWO successfully demonstrated an ability to engage lenders in the program, unlocking millions of dollars of private capital while eliminating costly credit enhancements. Most recently, CEWO's primary lender, Craft3, successfully completed one of only a handful of residential loan portfolio sales in the nation. The sale of these assets brings much-needed liquidity to CEWO exactly when it is transitioning to the post-grant period.

From its inception, CEWO understood the critical importance of marketing and driving demand to the overall success of the endeavor. CEWO thoughtfully crafted its brand to encompass attributes of comfort, quality, confidence and cost. CEWO conducted professional primary market research to inform the development of its value proposition and core messaging. CEWO has diligently engaged with each of the many important stakeholders and partners in the residential

energy efficiency/Home Performance space, such as lenders, utilities, ratepayer advocates, realtors, contractors and consumers. The use of public and purchased data to target direct mailings has proven to be one of the most successful lead generation tactics for CEWO.

CEWO'S mission focus on 1) ensuring equitable access to economic opportunity driven by its work and 2) on diversifying the Home Performance industry and related trades, has yielded results to be proud of. Nearly 13 percent of project dollars have gone to minority- and women-owned firms. More than 55 percent of project work hours have been performed by women and people of color. Forty-seven percent of new entry-level hires are women and people of color. CEWO contractors pay family-supporting wages and 81 percent of prime contractors offer employer-subsidized health insurance. Notably, CEWO successfully convened a group of stakeholders to create the state's first approved, registered apprenticeship pathway for residential weatherization technicians/installers. The benefits of this achievement include validating the industry as a specific and distinct trade within construction and enabling an apprenticeship wage structure that reflects skills gained over time.

## RESULTS AT A GLANCE

<b>Total applicants:</b>	12,077 (from CEWO launch in Mar 2011 to present)
<b>Total audits:</b>	7,641 (from CEWO launch to present)
<b>Total retrofits:</b>	3,254 and counting (includes 3,199 residential projects, 21 school, and 34 small commercial buildings)
<b>Jobs created and retained:</b>	Over a 1,000 workers have received a paycheck on a CEWO project 342 new construction hires
<b>Economic activity generated:</b>	\$49 million
<b>Workforce equity and diversity:</b>	More than 55% of project work hours have been performed by women and people of color. Forty-seven percent of new entry-level hires are women and people of color.
<b>Total electric savings:</b>	~7,090,000 kWh
<b>Total gas savings:</b>	~767,000 therms
<b>Total savings from other fuels:</b>	~24,000 MMBtu
<b>Total carbon avoided:</b>	~8,500 MT CO <sub>2</sub> e
<b>Small commercial buildings served:</b>	34
<b>Bucks for Buildings grant dollars awarded:</b>	\$299,761

## Looking Ahead

CEWO plans to continue operations under its current name with the dba of Clean Energy Works (CEW). The organization is focused on growth in the residential sector, creating living wage jobs through increased volume.

In the 2013 Oregon State legislative session, the state lottery budget bill allocated \$5 million to CEW. The Legislature and Governor have committed to providing additional funding for CEW in the upcoming 2014 short session. The use of ratepayer dollars to fund CEW's gap has proven to be somewhat contentious within Portland's energy efficiency market. From the City's perspective, ratepayer dollars seem to make sense as a source of temporary, gap funding for CEW during this phase of its transition toward a revenue-generating business, but not all of the stakeholders agree.

CEW staff and Board spent most of 2013 refining the business' revenue model. Over time, CEW plans to add residential services, such as seismic upgrades, radon mitigation and solar to its service offering. CEW hopes to earn revenue from contractors, consumers, utilities and lenders for delivering value to each. Contractors began paying CEW for lead generation in November 2013. Customers may eventually pay for all or part of the energy audit or for customized Energy Advisor services.

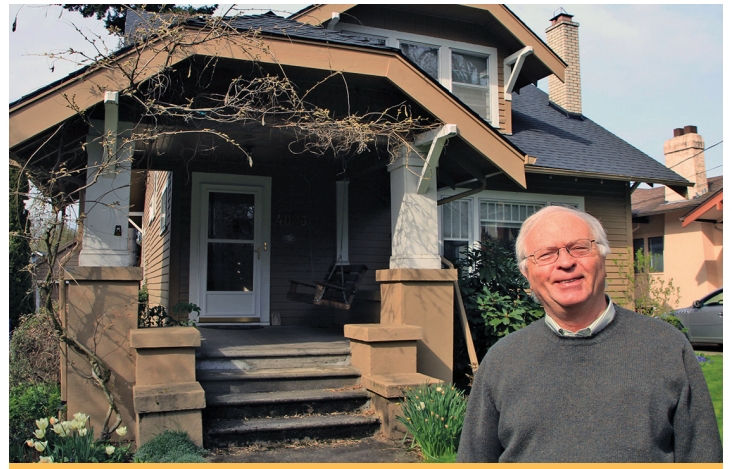
The utility sector is key to CEW's success. Issues around cost-effectiveness will need to be addressed so that CEW can earn revenue for every kilowatt-hour or therm it delivers to the utility sector.

CEW is working in partnership with the City of Seattle, Craft3 and other market players to regionalize the business model. Currently the relationship generates some consulting revenue for CEW.

CEW's revenue model shows that with sufficient volume, the business can break even at the unit-level by the end of 2014. Breaking even at the organizational level, meaning that earned income covers full overhead, is planned for the end of 2016.

While the path forward may not be entirely clear, what's certain is that Clean Energy Works Oregon has had a material impact on the market it set out to address. Whatever the future holds for Clean Energy Works, these accomplishments stand on their own.

The City of Portland and Clean Energy Works deeply thank the U.S. Department of Energy for its generous and stalwart support of this work.







# CLEAN ENERGY WORKS OREGON FINAL TECHNICAL REPORT

## Institutional Design and Business Model

Clean Energy Works Oregon expanded out of a City of Portland-led pilot program called Clean Energy Works Portland (CEWP). In 2009, CEWP was funded under the formula Energy Efficiency and Conservation Block Grant (EECBG) program. Portland dedicated twenty percent of its \$5.6 million formula block grant allocation, approximately \$1.1 million, to seed the corpus of a revolving loan fund.

Local funds were added to the EECBG funds to launch the revolving loan fund with a starting balance of \$1.9 million and a ten percent loan loss reserve (\$200,000). The Portland Development Commission, the City's economic development agency, committed another \$3.5 million in 2010, most of which went toward loan origination.

As the pilot loan portfolio increased, DOE allowed Portland to re-allocate additional formula EECBG dollars to expand the loan loss reserve to an eventual size of \$400,000.

During CEWP, the City of Portland engaged a Pacific Northwest community development financial institution, then doing business as Shorebank Enterprise Cascadia (now DBA Craft3), to be the pilot fund manager. Craft3 remained with the program as the primary lender when CEWO officially launched in March 2011.

The original idea behind CEWP was to test whether Portland residents would be more likely to adopt energy efficiency upgrades if they were offered a comprehensive package of services and benefits. That comprehensive package included: low-interest, long-term financing and rebates to cover the up front costs; free energy assessment; assistance from an independent energy advisor; and the convenience of repaying monthly loan obligations through the heating utility bill.

Not only did pilot participants undertake deeper upgrades than their counterparts in other local energy efficiency programs, but they made the decision to take action more quickly. The pilot — which was not funded with the BBNP award — was responsible for completing 584 projects, providing low-interest loans for whole-home energy remodels, and helping to reduce energy consumption in most homes by 20 percent or more. The project employed 415 workers, including 51 new, entry-level hires in the construction trades. And 94 percent of participants surveyed said they would recommend the program to friends or family. However, the pilot program was expensive to operate and not immediately scalable.

From the beginning of the pilot and in the run-up to the application for competitive EECBG funds (now known as the Better Buildings Neighborhood Program or BBNP), Portland program leadership anticipated the creation of a non-profit or special purpose entity that could more nimbly deliver on the anticipated DOE grant objectives. This entity was contemplated in Portland's proposal for the competitive grant funds.

Better Buildings Neighborhood Program (BBNP) grant funds were awarded in April 2010. The \$20 million award enabled the City of Portland (the grantee) to scale up the pilot program and launch an independent nonprofit, Clean Energy Works Oregon (CEWO) in June 2010. Portland and CEWO entered into a three-year sub-recipient grant agreement for \$18 million to deliver on the objectives of the BBNP grant. During the past three years, CEWO has refined its processes, lowered its operating costs, and embarked upon a path to self-sufficiency.

The basic program design of CEWO has not changed fundamentally since the pilot, though many of the implementation details, operations and processes have been refined and improved with the intent of enabling the business to scale. A few of biggest changes since the pilot include:

- The addition of multiple lenders, providing consumers with the choice and flexibility they requested during the pilot.
- Right-sizing the role of the Energy Advisor so that costly personnel resources are devoted to projects where they can deliver the greatest value.
- Decreasing the amount of rebates and eliminating credit enhancement entirely, in order to bring down the direct costs involved in each retrofit.

CEWO has expanded to cover most of the state. CEWO is now available in 19 counties in Oregon, which account for the vast majority of the state's population base.

Whether or not CEWO would or could survive beyond the grant remained an open question for some period of time. But at some point in CEWO's evolution, it became widely accepted that CEWO would make every attempt to continue beyond the federal grant period as a self-sustaining, revenue-generating business.

This decision led CEWO to pursue several different paths simultaneously toward self-sufficiency. The first and most critical has been to reduce costs. In CEWO's early years, despite substantial marketing and personnel budgets, the biggest cost center for the program was the direct

costs of delivering a retrofit. Direct costs included credit enhancement, rebates, test-ins and energy advisor services. Roughly fifty percent of the average project cost was subsidized by CEWO. The organization successfully eliminated the need for credit enhancement by attracting additional lenders to the program, including several credit unions and a fairly sizable regional bank of the traditional regulated variety. Rebate amounts have been scaled back over time, as has the role of the energy advisor. CEWO has made tremendous strides in reducing its cost structure.

The sale of the loan portfolio, valued at roughly \$20 million, has been another essential component of organizational sustainability. CEWO, together with Craft3, has been pursuing this sale for almost two years. Selling the loan assets would provide CEWO with much needed liquidity to continue operations. While a serious buyer for the portfolio negotiated with Craft3 and CEWO for months, closing was repeatedly delayed due to contractual issues related to the utility on-bill repayment feature of the loans. However, we are pleased to report that, as of this writing, Craft3 and CEWO have successfully completed this sale!

Beyond cost reductions and bringing in revenue from the loan sale, CEWO has engaged in the development of a post-grant period revenue model that shows how it can get to self-sufficiency within the next two years. The revenue model depends on flipping the entire grant-funded business model on its head and taking in revenue where before the organization had given it out. CEWO evaluated its place in the value chain of residential home performance and determined that contractors, customers, utilities and the public sector each receive benefit from CEWO's presence in the market. The challenge has been to determine how to monetize that value. CEWO took its first steps in November 2013 toward implementing the revenue model, by beginning to charge contractors a lead generation fee for qualified leads delivered by CEWO. More detail on the revenue model is provided in the ***Program Sustainability Plans*** section.

Finally, transitioning from an organization that is grant funded and required to spend \$20 million dollars in three years to one that charges for its services and stands on its own requires a serious shift in organizational culture. CEWO has invested important resources in helping staff understand and contend with this transition.



# Program Design and Customer Experience

CEWO attempted to incorporate the best attributes of the pilot program into the scaled-up effort, while reducing costs. CEWO was very hands on and costly as multiple communications between customer service representatives, energy advisors, and the single program lender were required to move a project through the process. CEWO focused on process automation through a unified service delivery platform, creating touch points with customers, contractors and lenders through email and website postings.

Enrollments to the CEWO program may be made online or by paper application (paper applications are entered into the service delivery platform by contractors or CEWO staff). Once enrolled in the program, CEWO's service delivery platform provides a linear process flow of tasks to be completed by program partners toward project completion.

Since CEWO officially launched in March 2011, a number of processes have been refined to improve the customer experience, including:

- **Development of *Your Project* section of the website.** *Your Project* functionality provides homeowners a view into their project status and progress through completion of the retrofit.
- **Self-scheduling of test-in audits.** Homeowners are given the option of self-scheduling or being routed to the call center for scheduling of test-in audits.
- **Elimination of Energy Advisor attendance at every test-in audit.** Energy Advisor presence was replaced by a *Welcome to CEWO* packet describing the process and identifying resources, mailed to the homeowner before the test-in audit.
- **Direct hiring of Energy Advisors.** In 2012, CEWO brought Energy Advisors in-house rather than contracting for these services to a third party. This change has improved CEWO's ability to work through program issues with homeowners, contractors and lenders and has enabled more effective communication of program changes, challenges and successes.

Throughout the retrofit process, CEWO issues surveys to gauge homeowner satisfaction. CEWO conducts market research both with homeowners who have completed and abandoned the program to gain an understanding and input on a variety of program and service enhancements. CEWO uses that feedback to review program procedures and update marketing and outreach materials that will resonate with prospective customers.



# Driving Demand

The CEWO offering and the way it is promoted has been refined over time based on research and thousands of interactions with prospects, customers and drop-outs. This section provides summary views on how best to drive awareness, conversion and satisfaction through effective and resource-efficient marketing tactics. A sample of CEWO's marketing collateral is attached as an appendix.

In 2011, a national research firm conducted consumer research on behalf of CEWO to pinpoint specific audience attributes according to the Lifestyles of Health and Sustainability (LOHAS) market segmentation approach. The research provided feedback from likely prospects (those interested in doing retrofits of their homes) about which service features they would find most appealing. The findings from this research asserted that CEWO should evolve its marketing messages to emphasize the following priorities desired by consumers:

- Comfort.
- Qualified contractors.
- One-stop shop service.
- Flexible financing options.

A series of marketing tactics have been rolled out since CEWO's inception. Best practices to date include the following:

- **Rebates.** CEWO has found that large rebates in the range of \$2,500 (generally at least double the incentive levels set by utilities) are most useful for driving application traffic. Amounts higher than this may have diminishing returns because they seem to be generally less helpful to conversion than the urgency created by the perception of losing out on the rebate. According to the theory of market transformation, CEWO is hopeful that the necessity of promotional tools like rebates — and their significant expense — declines over time as valuation of energy efficiency improvements occurs in the real estate market.
- **Instant rebate codes.** Coupon codes featured in CEWO's advertising have been a very useful tool for two main reasons. First, the homeowner benefits from having an immediate buy-down of the project cost, thereby having the option to finance a smaller amount and have a lower monthly payment. Second, the code can help a prospect feel like they have something special and scarce, creating the opportunity for urgency to motivate a customer. Third, this feature enables the program and its contractors to track the efficacy of a variety of outreach methods.



- **Urgency created through expiration of rebates.** Several contractors use the expiration of CEWO rebates to motivate prospects to sign bids. CEWO messaging reinforces and buttresses this sense of urgency in the consumer's mind.
- **Your Project web engagement.** The customer's expectations are set, and their purchase decision is rewarded through a series of messages on the *Your Project* section of the CEWO site. These messages include those that promote rebate expirations. Through these messages, customers are informed of next steps and kept posted on the status of their project. One challenge to this effort is that some customers simply don't track their project online, leading to a feeling of CEWO being uninvolved. Moreover, recent customer satisfaction surveys indicate that CEWO may be overloading homeowners with too many prompts and information.



- **Contractor marketing.** Thirty-five percent of the program's historical leads have been driven by contractors. This helps reduce marketing costs, though some expenses are necessary to produce marketing materials.
  - **Utility and government direct mail.** These are particularly useful outreach methods, especially if they are in window envelopes with the utility or government logo and have the implicit endorsement of these trusted parties.
  - **Customer trial through free audits to expand awareness.** Throughout the CEWO experience, there has been persistent debate among contractors, Energy Trust and others about whether or not to charge homeowners for a home energy assessment. Evidence from this market and other markets suggests that if the Home Performance industry is to grow at a rapid pace, then audits should be offered for free. The rationale is that adoption occurs through trial, particularly when the offering is not widely understood in the marketplace. Adoption leads to word-of-mouth referrals. The challenge is that audits present a cost to the contractors. Key questions include:
    - Which data points are imperative for an effective assessment to be done?
    - Which data points are useful for the program to capture?
    - When during the customer engagement process should the full diagnostic evaluation and detailed measurements be taken?
- Given the revenue model's initial and primary focus on the contractor, the importance of a solid marketing team and strategy has never been clearer. The learnings to date inform a number of new outreach strategies to:
- Improve targeting using public data about the home and homeowner.
  - Leverage non-energy efficiency gateways for customer acquisition; for example hooking prospects interested in radon mitigation, seismic strengthening or solar, and encouraging them to add energy efficiency to their purchase mix.
  - Inspire a robust and valued partner network to collaboratively market CEW to customers, including lenders, realtors, contractors and other community-based organizations. This collaborative model allows CEW to tap into new member (homeowner) channels, and provides CEW program value to the partner.
  - Initiate a referral program via house parties, where prospects join together for intimate peer-led presentations on the value of completing a project. This strategy helps illuminate value in energy performance (making the intangible tangible), creates a viral champion communication channel, and brings new customers into the program.
  - Build upon neighborhood-based strategies, where community groups canvas geographic areas to drive deep penetration in communities.
  - Refresh the brand presence to ensure that all points of communication and customer experience are aligned, meaning that internal expectations meet external expectations of service delivery.
  - Increase CEWO's touch with the customer to enhance the customer experience and increase post-project ambassadorship. This strategy is a response to market feedback suggesting that homeowners may be less clear about CEWO's value since removing the Energy Advisor from the front of the process.
  - Enhance and aggregate reach with an employer-subsidized energy efficiency benefit program. Modeled on other successful programs, like HEAL (Clinton Climate Initiative – Home Energy Affordability Loan program), CEW will approach large employers to make CEW available to their employee base as an employer-benefit offering, similar to a 401K or healthcare package. CEW information will be promoted, discussed and offered at the workplace – reinforcing the employer commitment and increasing conversion potential.
  - Market to lifetime value of the customer, where we are developing capabilities to meet customers where they are by staging a retrofit over time (including seismic, radon, et al) and to follow the customer should they move.
  - Systematically engage with the real estate industry so that recognition of energy efficiency improvements occurs in sale prices, thus leading to another reason to complete a retrofit. Implementing a statewide energy performance score would lead to a pull in the marketplace as home buyers seek out more energy efficient homes



## Workforce Development

The workforce development component of Clean Energy Works has been a substantial part of its success; both in terms of creating local economic opportunity and in ensuring that well-vetted contractors and trained workers perform high quality work in the field. CEWO's primary framework when implementing workforce development policies has been a High Road approach, which focuses on quality training and on equitable access to good jobs with family-supporting wages and benefits.

From the beginning, local, state and national leaders understood that there was a unique opportunity in the construction sector as it was spiraling downward due to the economy and changing from a focus on new construction to a focus on retrofits. The time was right to transform the market and deliver on the idea that a financially self-sustaining Home Performance industry could not only reduce energy consumption but also support economic equity and pathways out of poverty. Undergirded by meaningful stakeholder engagement, the equity framework developed in the Clean Energy Works Portland pilot focused on workforce development or green jobs (wages, benefits, training, hiring) and business development/support. In other words, changing the demographic makeup of the workers and businesses working in home performance and increasing pay and benefit standards were deemed to be the critical pieces needed for equitable economic development and job creation.

Early on, the City of Portland invited a unique and impressive group of organizations to come together to craft a workforce agreement on High Road goals and strategies. Organizational and business partners included Energy Trust of Oregon, Conservation Services Group, and a group of local stakeholders and advocates—including Carpenters Union Local 247, LiUNA Laborers Union Local 483, Coalition for a Livable Future, Metropolitan Alliance for Common Good, Metropolitan Contractor Improvement Partnership,

Oregon Tradeswomen, Worksystems, Inc., Oregon Apollo Alliance, National Association of Minority Contractors of Oregon, Native American Youth and Family Center and Green for All. This agreement (called the Community Workforce Agreement in those days) laid out the road map to creating jobs while providing high-quality employment and access for those in the community who have been historically left out of new economic opportunities. The Mayor of Portland, at that time Sam Adams, subsequently appointed a Stakeholder Evaluation and Implementation Committee to provide ongoing community oversight on implementation, monitoring and evaluation.

The specific emphasis on jobs was rooted in the intrinsic and tangible power of work. Work itself is fundamental to how human beings realize their sense of worth and maintain their dignity in this world. Though there are many factors, a job is one of the most meaningful ways people can participate in and guide their economic destiny. And a job—particularly one with a fair wage—has a measurable economic impact on an individual, her/his family and the community.

The Community Workforce Agreement (CWA) was a framework of workforce and community standards, targets and benefits that were used to measure, encourage and promote success, as summarized below:

- Requirements for contractor participation (e.g., hire locally, pay family-supporting wages and hire from designated training providers).
- Incentives for meeting specific objectives (e.g., providing health care insurance, employing a diverse workforce, being or contracting with a historically underrepresented business, mentoring other contractors). These incentives took the form of awarded CEWP projects. The higher a contractor applicant scored on CWA objectives, the more retrofit projects were allocated to that firm.



- Support for approved and emerging contractors (e.g., training and continuing education resources, business classes, business coaching, peer mentoring, access to working capital, engagement and outreach efforts targeting underrepresented and economically disadvantaged contractors).

When CEWO was formed, one of its first actions was to convene a statewide High Road Advisory Committee to refine the High Road Standards and Benefits for implementation in communities throughout the state. This group considered input and information from a Portland pilot scale-up subcommittee; from the Rogue Valley's Green Jobs Council (who independently developed its own Community Workforce Agreement); and from national research about best practices nationwide. All the recommendations from this group were incorporated into a new agreement in 2011.

The key benchmarks against which High Road success and progress are measured include:

- 30 percent of all trade and technical hours worked by historically underrepresented and economically disadvantaged people, including people of color, women, low-income residents and veterans.
- Diverse businesses — those owned by historically disadvantaged or underrepresented people — received 20 percent of total project dollars.
- At least 80 percent of workers participating are residents of their own communities. Local is defined as within a 50-mile radius of the project, unless otherwise defined by the community.
- 180 percent of Oregon state minimum wage or Clean Energy Works' established wage minimum (250 percent for specialized work in the Metro area and 200 percent for specialized work in rural areas) paid to workers participating in our projects.
- 100 percent of workers receive either health insurance coverage or additional wages at no less than \$2.50 per hour in lieu of coverage.
- Resources for continuing education and certification are available to those coming into the home performance industry and to those ready for opportunities for promotion and upward mobility through career pathways and training in entrepreneurship.

To date, CEWO has performed on all numbers except in diverse minority- and women-owned business participation. Specific results we've gathered so far include:

- 55 percent of the more than 361,452 project work hours have been performed by women and people of color.
- Minority or women-owned small businesses receive 12.92 percent of the project dollars.
- More than 81 percent of our prime contractors offer employer-subsidized health insurance.
- Median wage for all workers is \$18.46 per hour, and the average wage is \$21.09.
- 47 percent of new entry level hires are women and people of color.

CEWO found that this framework has been a successful way to prioritize workforce development decisions, manage the contractor pool, and work to build a credible construction trade. CEWO created an incredible amount of homeowner demand and growth opportunity for small businesses across the state. Through the high road approach, we coupled that demand with thoughtful business development resources and provided good quality job opportunities with training and career pathways for the workforce. This combination — dramatic growth and corresponding support — helped shape a more resilient and stable Home Performance industry, in which contractors and their crews are now more capable as well as highly committed to their trade.



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## Business Support

CEWO worked with its contractors and provided business coaching, peer mentoring, business development classes and sales training. These skills are key to helping the Home Performance industry succeed. CEWO worked with local vendors to provide cultural competency, business accounting, profit and loss, sales, marketing and other topic area trainings for our prime contractors. These trainings were well-received and helped participating contractors improve their business processes, making them more streamlined and profitable.

## Worksystems and CEWO Partnership

CEWO and Worksystems Inc. (WSI) — the designated regional coordinator of the Portland Metropolitan area workforce system — partnered to provide training and employment support in the growing Home Performance and energy efficiency arena. By combining resources and grant funds, CEWO and WSI directed mutually leveraged funds to help entry-level workers access opportunities for weatherization training, employment planning and on-the-job training. Approved training providers and employers had increased resources to train, hire and retain a skilled and qualified workforce, which was needed to meet the growing demand for home energy upgrades. Sixty-two (62) job seekers were trained in a weatherization course and found an on-the-job training opportunity in the Home Performance industry.

CEWO connected and coordinated at a smaller scale with other workforce investment boards across the state, including the Clackamas County Workforce Alliance and Job Growers, Inc. CEWO also worked with WSI and Job Growers Inc. to provide continuing education and training scholarships in an effort to help contractors promote from within. This resulted in more than 29 BPI certifications, 18 PTCS certifications and numerous OSHA 10 certifications being earned by the existing workforce.

## Registered Apprenticeship for Weatherization Workers

Clean Energy Works Oregon convened experts and stakeholders in the Home Performance field to develop an application for a registered apprenticeship pathway for a residential weatherization technician/ installer in Oregon. CEWO invited participants based on their interest in and ability to effectively contribute to developing an application that included high-quality training and curriculum aligned with national standards (NREL/DOE standards), while

simultaneously reflecting High Road standards and benefits. An approved registered apprenticeship pathway (approved through the Oregon Bureau of Labor and Industries) will meet many critical needs in the home performance industry, including:

- Standardizing the occupational description, skills and abilities of a weatherization technician/ installer.
- Validating the industry as a specific and distinct trade within construction.
- Ensuring a qualified and trained workforce for the industry.
- Supporting on-the-job training by enabling an apprenticeship wage structure that reflects skills gained over time.

The application for a state registered residential weatherization installer apprenticeship program was approved by State of Oregon Training and Apprenticeship Council October 22nd, 2013.

## Job Creation

Workforce development and job creation have always been a primary focus as CEWO launched at the height of the unemployment crisis in Oregon. More than a 1,000 workers have received paychecks from a CEWO project, including more than 342 new construction hires. Through Q3 2013, construction workers alone spent nearly 360,000 hours on CEWO retrofit projects. Together, they earned an average wage of \$20/hour, as well as training and opportunities for promotions and health benefits. There are currently 56 contractors approved to work on CEWO projects, and it's estimated that their businesses have grown five times faster than other businesses in the Portland region. All of this business has led to \$25 million in total revenue for CEWO contractors. In addition to the employment impacts in the construction industry additional jobs have been created or retained through program administration, grant management, and other leveraged positions. The program has reported an additional 236,000 hours of non-construction work performed to deliver on the grant objectives. This is equivalent to about 39 FTE each year over the grant period.

## Lessons Learned

- **Align training funding with demand creation timelines and cycles.** It is important to align and time the training efforts and Department of Labor funds so that trained people are ready when contractors are hiring.
- **Standardize training.** CEWO's workforce is in the field installing measures in order to realize and ensure energy savings, so it is important that they are properly and consistently trained. Financial markets will become more comfortable with lending for energy efficiency if measures are properly installed and deliver the promised savings.
- **Leverage existing resources and networks.** Involve a wide range of stakeholders, including labor unions, community-based organizations, training providers, and workforce investment boards/ unemployment services to utilize existing experts i.e. case managers, etc. to connect job seekers with employers who are hiring.
- **Build career pathways for diverse populations.** CEWO has provided an opportunity to diversify the building trades and Home Performance workforce (i.e. women and people of color are getting into construction).
- **Shift traditional working conditions of residential construction industry.** Many contractors have found value in investing in their crews: the quality of work is better; there is less turnover and more stability for their businesses. This has been achieved through focusing on providing full time employment, family-supporting wages and training opportunities for their workforce.

Entry-level weatherization positions have become a good stepping stone to other opportunities, giving workers hands-on experience in construction:

- Registered apprenticeship into other trades (electricians, plumbers, etc).
- Moving up to Building Analysts or Project Managers.
- Pursuing advanced degrees in sustainability (passive building, LEED, etc.).





# Financing and Incentives

## Financing

During the program pilot, the City of Portland entered into an arrangement with Craft3 (formerly named Shorebank Enterprise Pacific) to provide low-interest, long-term financing with utility on-bill repayment to program participants. CEWO extended this relationship and contracted with Craft3 in January, 2011 to provide financing of up to \$14,000,000 for program participants. As part of this agreement, Craft3 agreed to make loans of up to \$30,000 to CEWO participants at an interest rate of 5.99 percent for 20 years. Loans would all be repaid through the participant's heating utility bill. CEWO agreed to provide a loan fee of 5 percent and a loan loss reserve equal to 10 percent of each loan.

CEWO's agreement with Craft3 was amended January 1, 2012 to reduce the loan fee amount to \$125/loan made while still providing a loan loss reserve of 10 percent. The agreement expired December 31, 2012 at which time CEWO eliminated funding of loan fees and loan loss reserves. Craft3 continues as a lender in CEWO's program although an active agreement is not currently in place.

During 2011 and 2012, as CEWO expanded its program throughout the state, Pacific Crest Federal Credit Union, Southern Oregon Federal Credit Union (SOFCU), Umpqua Bank, SELCO Community Credit Union and Advantis Credit Union joined as program lenders. While loan fees and loan loss reserves were initially offered to Pacific Crest and SOFCU, other lenders were not offered these concessions. CEWO eliminated payment of all loan fees and loan loss reserves effective January 1, 2013. SOFCU withdrew as a program lender at that time, primarily due to acquisition of the company by First Community Credit Union.

CEWO allows homeowners to select their lender and loan option from a slate provided by each of the lenders. CEWO initially required participant loan interest rates not exceed 5.99 percent; with multiple lenders/loan options now available, interest rates and terms remain competitive.

Once CEWO operations got underway, attempts were made to bring additional lenders into the program. CEWO found credit unions to be the most likely lending partners. Credit unions are generally small enough, reducing the layers of approval and company hierarchy and community-minded enough to see a fit with CEWO's mission and their own. Credit unions view the program as an opportunity to market



to prospective customers. CEWO was also able to generate interest with Umpqua Bank, a regional bank. Umpqua was interested in lending into the energy efficiency market and saw CEWO as an avenue to increase this business and bring new customers into the bank.

Loan origination fees and loan loss reserves were required by Craft3 and the first two credit unions in the program. When Umpqua Bank joined as a lender, CEWO did not offer to pay loan origination fees or loan loss reserves and found that Umpqua was still willing to participate. This provided market feedback to CEWO that loans created by the program were desirable and that incentives to get lenders to work with the CEWO program were no longer required. New credit unions were added to the program without concessions and CEWO was then able to discontinue providing loan origination fees and loan loss reserves.

# Incentives

CEWO initially launched its program with aggressive incentives (rebates) to generate interest in the program and early adopters were quick to apply. Incentives were based on the level of projected energy savings. Additionally, four local communities joined CEWO in providing additional incentives of \$500 for the first “x” number of homes that completed an energy efficiency upgrade in their area. Similar incentives were offered in each new market entered. Figure 1 shows CEWO’s rebate amounts by savings tier over three time periods. After an initial 90 days in each new market, incentives were lowered to \$1,500 for savings of 30 percent or more, \$1,000 for savings between 20 to 30 percent, and \$500 for savings between 15 to 20 percent.

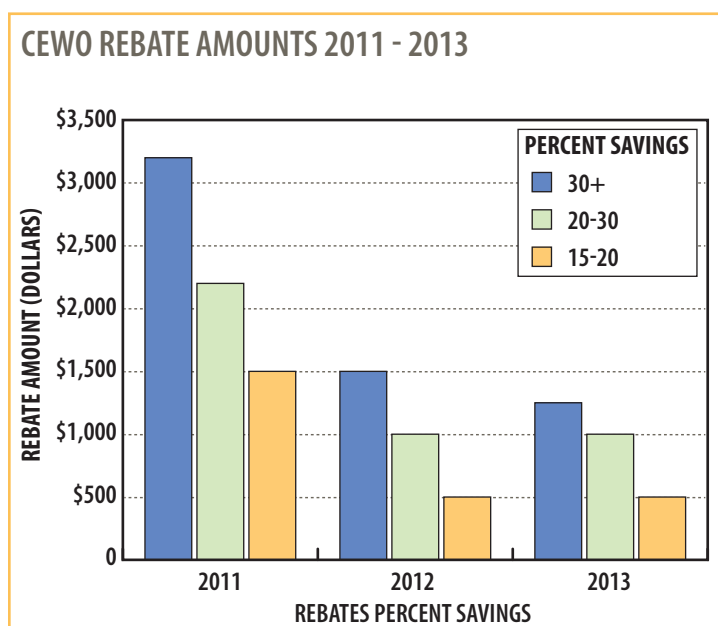


Figure 1: CEWO rebate amounts have decreased over time.

CEWO incentives are partially offset by homeowner incentives provided by Energy Trust of Oregon (ETO) for projects completed within investor-owned utility territories. CEWO offers homeowners a preset incentive amount and later applies to ETO for the incentive the homeowner would have received if they had gone directly through ETO for the incentive. To date, incentives from ETO have averaged approximately \$1,000 per completed project. CEWO is currently working with consumer-owned utilities throughout the state to offer energy savings in exchange for homeowner incentives, similar to the arrangement with ETO.

Through December 2012, CEWO contracted with Conservation Services Group (CSG) to provide Energy Advisor services and to determine projected energy savings for homes going through the program. CSG was the program management contractor (PMC) for ETO’s residential program and assisted CEWO in processing ETO incentives. Energy savings were projected using CSG’s modeling software, Real Home Analyzer and Energy Measure Home. Energy savings of over 30 percent were projected for the majority of CEWO projects using the CSG software.

In January 2013, Fluid Market Strategies replaced CSG as Energy Trust’s program management contractor. With this change in PMCs, CEWO discontinued use of CSG’s energy savings modeling tool, and developed a deemed savings modeling tool which more closely aligns with ETO’s methodology in calculating energy savings. Using the deemed savings tool, CEWO has seen a reduction in the projected energy savings, where the majority of homes are now projected to achieve between 20 to 30 percent energy savings. With implementation of the deemed savings tool and the recognition that rebate levels were not sustainable, CEWO reduced rebates (see Figure 1).

CEWO’s current philosophy is to provide incentives averaging approximately \$250 more than a homeowner would receive if they were to go directly through ETO for incentives. Incentives help to engage homeowners in the program and through happy homeowners and word of mouth, additional homeowners will enter the program.



# Data and Evaluation

Over the course of the grant term, data and evaluation have been a continual challenge for both the grantee and CEWO. From the early days of Clean Energy Works Portland, it has been a struggle to compile data from multiple third-party sources, including the workforce data from contractors, project-level data from Conservation Services Group, and loan portfolio data from Shorebank Enterprise Cascadia/Craft3). The scale of the pilot made the task manageable, but without an IT system, the manual process was time consuming and prone to inaccuracy.

With the scale up to Clean Energy Works Oregon it was clear that an IT solution was needed to meet the demands of funding agencies, media requests and good project management from the customer perspective. CEWO worked with Energy Savvy, a software company, to develop a unified service delivery platform to manage the retrofit process from application to completion. The software platform, called Optix, provides an interface between the homeowner, contractor and lenders, enabling each party to document progress through the CEWO program. While the platform streamlined data collection and analysis on some fronts it did not include the project results, measures and energy modeling that CSG and later Fluid Market Strategies, reported to Energy Trust of Oregon. At this time neither the grantee nor CEWO has direct access to this data set.

## Secondary Utilities and Other Fuel Types

When CEWP and CEWO were initially designed, the primary feature was on-bill repayment of the energy efficiency improvements through the heating utility. Due to this, feature all program benefits were quantified in terms of the heating utility fuel. The first generation of the program application and the IT platform only collected a single heating utility name and account number.

This became an issue on projects that included both kWh and therm or other fuel savings for installed measures. Other fuel savings were particularly problematic because CEWO didn't know the fuel type, as the IT platform was only designed to support projects with electric and gas heat. Energy Trust's PMC provided CEWO with the MMBtu for the other fuel projects, but no identifier to indicate the other fuel type. These other fuel sources were not collected anywhere in Optix. The data was collected in the field and entered into the model to calculate savings but no mechanism had been developed to transfer this data to Optix.



When there was a combination of savings or other fuel types, the PMC reported those numbers in MMBtu. Because the Better Buildings Program Report template only includes the option of kWh or them for electric and gas fuel types, all savings were converted into the primary fuel type.

This design flaw led to the significant issues with projects reported prior Q2 2012, which meant that multiple fuel types were rolled into a single reporting field. This impacted how data could be analyzed by program staff and DOE. It was determined that it would be nearly impossible to retroactively collect secondary utility info and model savings differently for the 1,700 projects that had already completed before the change could be fully implemented on the application and IT platform. The grantee has counted on access to utility usage data as the only way to resolve these issues. See more about this below under *Utility Usage Data*.



## Heating Load Savings vs. Total Building Energy Savings

From the early days of the CEWP pilot, Energy Trust's PMC used software to model the energy savings that only reported heating load savings in the units of the primary heat source. This meant that some savings may have been under-reported. For example, if a new high-efficiency gas furnace was installed, the reporting did not capture the minor kWh savings for the variable speed motor. It also meant that the percent energy savings was actually based on the total heating load, not the total building energy use across all fuel types. This means that the percent energy savings calculations were overstated for these projects because they didn't take into account the total building energy use.

This problem was first identified in April of 2012 and could not be corrected on previously completed and reported projects. However, the changes to the program were made immediately and project savings were correctly reported by total building energy use as of Q2 2012.

## Savings Projections

When CEWO first launched, CSG used Real Home Analyzer to model and project energy savings on all projects. On August 22, 2011 the CSG and therefore CEWO made the change to Energy Measure Home (EM Home). Energy Trust evaluated the program savings to date and found that reported savings were as much as 40 percent higher than what Energy Trust had deemed for residential energy efficiency improvements. Energy Trust urged its PMC and CEWO to move to deemed savings. This change was finally made in January, 2013.

Savings are currently calculated based upon deemed savings numbers provided by Energy Trust of Oregon. These savings are derived from evaluation data on primarily single measure install projects within the Energy Trust Existing

Homes program. The deemed savings set by Energy Trust have been reduced to account for free-ridership and other factors. Energy usage is based on the average usage data for an average-sized home in the Energy Trust service territory. Actual usage is used when utility usage data is reported as part of the initial test-in and the deemed savings are adjusted by relative house size, occupancy and several other factors.

Some projects have been reported without any energy savings. These projects were initiated during a period when CEWO was not requiring that test-in data be recorded for each project, and as such there is no baseline modeling to calculate energy savings.

## Percent Energy Savings

There have been numerous projects reported with savings of less than 15 percent. Many of these projects were approved using the EM Home savings model. These were approved based upon estimated heat load savings percentage and did not include total building energy use in the savings percentage calculation. Projects that had test-ins after Q2 2012 calculate the percent energy savings based on the total building energy use. For some measures that utilize deemed savings, the results are consistently more conservative than what was initially calculated with the Energy Measure Home model.

Some projects have an exceptionally high percentage of energy savings. In most cases these have included large amounts of replacement windows. The deemed savings for windows come from a different data set than the deemed savings for all other measures and as a result windows savings tend to predominate.

## Fuel Switching – Negative Cost Savings

There have been several projects with negative cost savings. These are associated with a fuel switch from oil to gas or electric heat. Each of these projects have had an oil system or inefficient gas furnace removed and a new heating system installed. This new energy usage is the sum of standard average asset usage minus deemed savings from installed weatherization measures. Negative cost savings result when the cost of one fuel is greater than the cost of the fuel that has been switched to. In most of the cases where this has been evaluated, it occurs with a switch from a natural gas heat to an electric heat pump. While we believe there are in fact savings in terms of BTU and reduction in greenhouse gas emissions, there appears to be a cost increase for the customer as a result of switching to more costly fuel source.



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## Audit Savings

One of the required reporting fields has been estimated savings and percent audit savings. We have not reported these figures. Each CEWO project does receive an audit (or what is called a test-in), however, CEWO does not model different scenarios at that time. This is primarily due to the need to limit and reduce program delivery expenses. When CEWO conducted modeling it occurred after the participant signed a bid agreeing to specific measures for installation. Currently, the program utilizes deemed savings instead of modeling installed measures.

## Utility Usage Data

In light of all of the issues identified above with energy savings estimations and changes in modeling software and program processes, the grantee and CEWO have been working diligently with the utilities to obtain energy usage data for every project. There have been a number of challenges with this task.

Obtaining utility usage data requires authorization from each customer. While CEWO included this step in their online application process, there was never a paper copy with a real signature from the customer. The online application asks the participant to select a box to indicate that they approve of the CEWO terms and conditions which states, “Participant agrees that Clean Energy Works and/or its representatives may access Participant’s electric and/or gas utility usage data and payment history for a period of twelve months before and after completion of the energy efficiency upgrade.” Without a real signature, the utilities were initially unwilling to cooperate. After months of negotiation between BPS and CEWO staff and utility legal counsel, an agreement was finally reached. This negotiation required Energy Savvy to document the functionality of the Optix platform that prevented any participant from proceeding past the first page of the application process unless they accepted the terms and conditions.

One of the utilities was particularly unyielding about the language that was used for the terms and conditions. They argued that the permission language authorized CEWO to access the data but failed to authorize the utility to *transfer* the data to CEWO. In the end, the utility agreed to transfer the anonymous data directly to US DOE so that neither the City of Portland nor CEWO would be able to track the data back to a particular project owner.

Ultimately Portland was able to reach agreements with three utilities. This group included the primary utilities for the Portland metro areas that participated in the CEWP pilot and who were supporting on bill repayment, which accounted for 90 percent of projects. The remaining utilities would not share utility usage data with the us. This group consisted of just over 10 public utility districts that serve parts of rural Oregon. As CEWO expanded its service territory they attempted to reach agreements with these utilities, but sharing of usage data was inevitably a dead-end negotiation.

While this would have been complicated enough, there were a number of other data issues that have hampered the venture to obtain utility usage data. In order to rectify the issues noted above with heating load savings versus total building energy use, we needed to obtain both the gas and electric utility data. As noted above, the lack of collection of secondary utilities from the program application and IT platform meant that the majority of projects only listed a primary utility. The quality of the data was also in question as it was entered by the project owner at the time of application. Some of these applicants incorrectly selected their utility. The Bureau of Planning and Sustainability is fortunate to have technical GIS capabilities in-house. BPS technical staff mapped all of the projects and identified their electric utility based on service areas. However, some utilities either didn’t have or wouldn’t share GIS data for their service territories. Seeking to identify the utility for each project, GIS staff geo-coded service territories based on hard copy maps.

This effort was further challenged by the fact that the utilities had a difficult time matching projects up to their accounts if there weren’t accurate account numbers. Some customers entered all zeros for the account number to skip forward in the application process or may have made typos. Often the program application listed a different name from the utility account holder or the account holder moved away from the associated premise.

All of these challenges have limited our ability to access the full utility usage data for all program participants. The first batch of test projects have been completed and submitted to DOE. It’s unknown exactly how many of those were successful given that one of the utilities would not share the data directly with CEWO. The second batch of projects, which includes all remaining projects completed by September 30, 2013, is currently being processed by the utilities.

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# Accomplishments

Statement of work objectives and accomplishments for the program are outlined below.

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## Task 1.0 Create New Non-profit Organization to Implement CEWO Program

- CEWO received its IRS 501(c)(3) tax exempt status July 28, 2011, effective June 11, 2010.
- The Board of Directors approved CEWO's three-year business plan May 14, 2012. The plan focuses on better defining CEWO's mission and values, key markets, operating and marketing principles and establishing a sustainable financial plan.
- CEWO's leadership team has developed a logic model to define the activities and outcomes critical in meeting the organization's mission. Operating plans were then developed by each department outlining the current situation, critical outcomes, strategies, objectives, metrics, supporting relationships and risks. Operating plans will be utilized to develop individual work plans for the year.

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## Task 2.0 Establish Financing and Funding Mechanisms

**Subtask 2.1** – Expand loan fund and on-bill utility repayment mechanism to create a conforming loan product that enables access to secondary market buyers.

- CEWO finalized agreements with lenders as the program launches in various geographical areas:
  - Craft3 (previously Enterprise Cascadia) – Portland metropolitan area and Columbia Pacific Region
  - Pacific Crest Federal Credit Union – South Central Oregon
  - Umpqua Bank – Central Oregon, Portland metropolitan area, Mid-Willamette region, Benton County, Hood River and Southern. Umpqua waives loan fees and closing costs to CEWO customers.
  - SELCO – Lane County/Eugene, Portland metropolitan area, Mid-Willamette region, Benton County, Central Oregon, and Rogue Valley
  - Advantis Credit Union – Portland metropolitan area and Hood River
- CEWO completed operating agreements with the investor-owned utilities Portland General Electric Company, Northwest Natural Gas, and Pacific Power that provide CEWO customers across the state the ability to repay their program loans on-bill. Operating agreements are currently being renegotiated naming Craft3, through the Energy Trust of Oregon, as the on-bill payment provider.
- CEWO completed operating agreements with community owned utilities, Springfield Utilities and the City of Ashland to enable the pass-through of homeowner incentives to CEWO on projects completed within their service areas.
- CEWO continues in active dialogue with remaining jurisdictions which will lead to staggered entry into various markets depending on their readiness. Program delivery is now in the areas of Portland Metro (Multnomah, Clackamas and Washington counties), Rogue Valley (Jackson and Josephine Counties), South Central Oregon (Klamath and Lake Counties), Central Oregon (Deschutes and Crook Counties), Hood River, Eugene (Lane County), the Mid-Willamette region (Yamhill, Polk, Marion and Linn Counties), the Corvallis area (Benton County) and the Columbia Pacific region (Columbia, Clatsop and Tillamook Counties). Entry to additional markets will be dependent on community interest and funding.

**Subtask 2.2** – Access secondary market for residential energy-efficiency loans.

- CEWO continues to work with Craft3 on the secondary market sale of the CEWO loan portfolio, now estimated to occur in Q4 2013. Craft 3 has the finalized terms with another CDFI, Self-Help Federal Credit Union; completion of the sale is dependent on extension of on-bill servicing agreements with investor-owned utilities, Northwest Natural Gas, Portland General Electric and Pacific Power.
- As of January 5, 2013, Craft3, CEWO and Self-Help Federal Credit Union closed on the sale of loan assets. The loan portfolio sale amount was \$15,787,734. DOE funds associated with the loan-loss reserve for the sale amounted to \$320,412.



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**Subtask 2.3** – Establish credit enhancement for residential projects.

- CEWO has completed build out of its lender selection functionality that enables homeowners to select from lenders offering loans within their geographical area. Lender competition has resulted in expansion of loan product offerings which now include expanded maturity terms and home equity lines of credit.
- CEWO added two new lenders during 2013 which, similar to Umpqua Bank, required no credit enhancements for the residential loan program. CEWO believes the market recognizes the value of customers and good loans generated through the program and that credit enhancements are no longer necessary. Effective January 1, 2013 CEWO no longer offers credit enhancements to new or existing lenders. Program lenders have found benefit in the opportunity to bring in new customers and solicit additional business from CEWO homeowners. Additionally, lenders value the CEWO retrofit process quality assurance that is provided to the homeowners. We are not aware of any other programs in the country that have achieved this milestone.

**Subtask 2.4** – Establish structured finance offering for large commercial retrofit projects.

- CEWO completed its work with several school districts; utilizing a portion of the Better Buildings grant funds designated as commercial credit enhancements in conjunction with Governor Kitzhaber's Cool Schools policy initiative to retrofit Oregon's schools. CEWO funding of approximately \$938,500 was provided to 20 school districts for the Cool Schools program in pre-construction support costs, energy efficiency incentive grants, and program management assistance. CEWO's investment has yielded the completion of energy efficiency work for over 1,050,000 square feet of property.
- CEWO provided MPower a \$200,000 grant to complete specific project activities including program design and launch, project finance and management, legal and accounting services, underwriting and investment approval and reporting. CEWO anticipates the investment to yield approximately \$5.1 million in leverage from the transaction and the retrofit of 1,700 multifamily units. The funding resulted from work previously completed through Blue Tree Strategies to develop the MPower multifamily Business Plan necessary to move MPower from concept into implementation and to support the Network for Affordable Housing (NOAH) in their negotiations with HUD on securing Energy Innovation Fund Capital. MPower has partnered with Central City Concern, a local nonprofit with significant low-income multifamily intercity buildings, to identify properties for energy efficiency upgrades. MPower currently has two projects in the works that will result in energy efficiency upgrades to 185 units.

**Subtask 2.5** – Develop a small commercial offering that incorporates an on-bill repayment option and other key elements of the residential program.

- The Portland Bureau of Planning and Sustainability (BPS) completed its pilot to support tenants and owners of small commercial properties (up to 50,000 sq. ft.) to identify and implement energy efficiency upgrades. BPS launched the Bucks for Buildings program in Q1 2013. The program included free ASHRAE level 2 audits to qualifying businesses and robust rebates for energy efficiency improvements that delivered electric or natural gas savings. The program was unable to include on-bill repayment for financing. Based on market research it appeared that most small business owners were opposed to taking out loans for energy efficiency improvements, so the program sought to buy these energy savings by deeply subsidizing the cost of energy efficiency improvements. This limited time pilot was extremely popular and provided BPS with valuable information to help develop a more permanent program offering.
- Bucks for Buildings served 34 small commercial buildings/businesses and funded nearly \$300,000 worth of energy efficiency retrofits (mostly lighting, some HVAC and a couple of weatherization projects).

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**Task 3.0 Implement Marketing and Outreach Program for CEWO****Subtask 3.1** – Integrate a consumer-based market segmentation approach into the deployment of the most effective outreach tools utilized in the pilot program.

- CEWO developed a set of typical customer profiles early on in the branding process to help refine brand identity, value proposition and core messaging.
- Demographically, CEWO customers in the metro area tend to be households with higher than median household income, with children, living in Portland's inner neighborhoods with charming, individualistic, turn-of-the-century housing stock.

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- CEWO has completed various direct mail campaigns to households across the state during 2012 and YTD 2013, utilizing different delivery methods and messaging. CEWO has found communications had the greatest response when the mailings were sent under the names of utility providers and the City of Portland.

**Subtask 3.2** – Develop uniquely effective messaging strategies that ensure broad, quick adoption rates.

- CEWO developed a full suite of marketing materials including website, brochures, contractor marketing tools, fact sheets, etc. that incorporate CEWO's brand and value propositions. Marketing materials are available to contractors at cost through a just-in-time program established with CEWO's printer.
- CEWO's comprehensive Orientation Packet, is presented to homeowners by the Energy Advisor at the CEWO Home Energy Assessment, or mailed directly to the homeowner. This packet includes info sheets on project timing, the home energy assessment, eligible energy upgrades, as well as six pages of FAQs.
- CEWO developed a suite of event materials, available through its marketing materials website, for use by local governments and contractors that includes horizontal banners, retractable vertical banners and t-shirts.
- CEWO has provided grants to four communities to assist in generating local demand and providing local program support to achieve completed energy remodels within its service territory: Rogue Valley through the Rogue Valley Coalition of Governments; and Klamath Falls through the South Central Oregon Economic Development District, Central Oregon through the Central Oregon Intergovernmental Council, and Benton County.
- CEWO conducts surveys of its customers throughout the retrofit process and post-retrofit. Results are compiled and analyzed to determine opportunities for improvement. Program to date responses to date have reported 92 percent of homeowners satisfied with their projects and would recommend the program to others.
- CEWO implemented a comprehensive email messaging system during Q1 2012 that issues life-cycle feedback surveys to participants, enabling real-time feedback from homeowners at each major stage of their project. Information gathered from these surveys is used to better understand the reasons homeowners leave the CEWO program without completing their home energy efficiency upgrade and also for satisfaction with projects upon completion.
- CEWO launched a new advertising campaign during Q3 2012. Grady Britton, a local marketing firm, developed the campaign based on feedback received from homeowners. The concept of the campaign is free at last or freedom, which resonated with homeowners who have had to use workarounds to stay warm in the winter or cool in the summer. Tag lines for the campaign are intended to convey CEWO's confidence value proposition. Marketing collateral has been updated to reflect the new campaign.
- CEWO launched a digital marketing campaign during Q3, running banners on the internet and advertising on Facebook. In two weeks, the Facebook ad generated more than 1,400 links to CEWO, reached an estimated audience of 50,000 in CEWO's demographic and increased our Facebook community by over 200. Additionally, CEWO continues to promote its program through radio and print advertising campaigns throughout the State and various direct mailings to targeted markets.

**Subtask 3.3** – Execute broader neighborhood-based outreach program to secure residential participation.

- Direct marketing approaches and GIS functionality have enabled micro-targeting of geographical areas for direct marketing campaigns.
- Contractors and community groups have been provided the lead generation codes, so they may track the effectiveness of their outreach efforts.
- CEWO's marketing strategy for the post-grant period involves greater attention to neighborhood-based marketing.

**Subtask 3.4** – Create centralized web portal for all interested consumers across jurisdictions.

- The web portal currently integrates applicant data and the process flow for program partners including the lender, Energy Advisors, program administration and contractors. The **Your Project** page provides consumers the ability to review their project status and progress through completion of the retrofit.
- CEWO email messaging system continues to evolve, connecting with customers at key stages of their project and calls their attention to the **Your Project** page of the website to view the next steps required of them to move their project forward. The email messaging system also provides CEWO the ability to launch life-cycle feedback surveys that enable real-time feedback from homeowners at each major stage of their project.

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## Task 4.0 Create Unified Service Delivery Platform

### Subtask 4.1 – Refine service delivery model using key elements tested in pilot program

- CEWO introduced self-scheduling to homeowners during Q2 2013. Upon application to the program and selection of their contractor, the homeowner is offered the opportunity to schedule their own test-in audit or connect with a customer service representative that will help them through the process.
- CEWO completed development of the deemed savings workbook for estimating energy savings and a program for extracting data from the workbook for reporting purposes during Q2/3 2013.
- CEWO implemented the XML structure to enable API to Earth Advantage Institute for creation of energy performance scores for CEWO projects during Q1 2013.
- Refinement of the full service delivery model is under continuous improvement based on the business process review and customer research findings. Back room functions, including some automation with reporting, functionality allowing for internal processing of incentive payments, and other process improvements recommended by CEWO business have been implemented to date. Significant enhancements to date are:
  - A real-time dashboard functionality to provide a quick overview of the project pipeline activities.
  - GIS integration for localized activities such as multiple lender integration and reporting to funding partners.
  - Workflow automation to advance project tasks from supply chain partner to partner with one-click.
  - **Your Project** web page provides consumers the ability to review their project status and progress through completion of the retrofit.
  - Rebate management system provides for tracking of energy audit and rebate payments to contractors.
  - Enterprise Reporting, which provides jurisdictional partners with the status of projects in their areas.

### Subtask 4.2 – Offer EAs to program participants.

- CEWO significantly revised the role of the Energy Advisor, eliminating attendance at the test-in audit for CEWO's long term contractors. Participant and contractor feedback suggested that while consumers value the quality review completed by the Energy Advisor at project completion, they did not find as much value in having the advisor at the test-in audit.
- The Energy Trust of Oregon changed its Home Performance project management contractor from CSG to Fluid Market Strategies effective January 1, 2013. At that time, CEWO brought the test-in/quality assurance services for the Portland Metro area, Mid-Willamette region, Hood River, and Columbia Pacific region in-house. In this effort, CEWO hired four Energy Advisors, an Energy Advisor Supervisor, and two Customer Service Representative to handle scheduling. Having the EAs on staff has improved customer service and provided greater control over CEWO's messaging. Fluid is currently providing Energy Advisor services for the CEWO program in Central Oregon, Lane and Benton Counties; we are looking at bringing these services in-house to ensure greater consistency in the quality review process.

### Subtask 4.3 – Develop one-stop-shop solutions for pre-weatherization challenges, including knob-and-tube wiring, asbestos siding, and lead abatement and roofing issues.

- CEWO's program provides for a remodeling contingency of 20 percent of the project amount to enable homeowners to resolve pre-weatherization challenges.
- Dialogues continuing with additional lenders include offering one-stop-shop complete solutions for remodel expenses ancillary to energy efficiency. CEWO's lenders, Umpqua Bank, SELCO and Advantis have developed loan product options for consumers to meet this need through a home equity lines of credit allowing for non-energy measures of up to 49 percent of the project cost.
- During Q4 2012, CEWO began evaluating adding seismic upgrades to the solution set in cooperation with the City of Portland and state agencies and is currently in process of completing a 30 unit pilot for the program.



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**Subtask 4.4** – Integrate CEWO with related Energy Trust of Oregon, ODOE and utility offerings to enable access to a full range of incentives available for building efficiency retrofits.

- Oregon Department of Energy's (ODOE) grant of \$3.5MM (later modified to \$2.5MM in exchange for additional ARRA funding of \$1MM) in lottery funds under the EEAST legislation enabled on-bill repayment for energy retrofit programs. The funds provided state leverage into the program and supported local workforce and marketing efforts in rural jurisdictions across Oregon.
- CEWO negotiated with the Energy Trust of Oregon to amend and extend its contract through June, 2013 in preparation for a broader review and agreement thereafter; the new contract has not yet been finalized.
- CEWO finalized its contract with Fluid that provided for limited ongoing, project based revenue related to whole home energy upgrades.

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## **Task 5.0 Develop and Expand Workforce Development Programs**

- CEWO has completed development of a Workforce Dashboard, providing greater visibility into the progress made with respect to CEWO's workforce diversity goals.
- CEWO conducts monthly conference calls to provide contractors with program updates, respond to concerns/questions from contractors, and to allow for peer exchange. CEWO holds a monthly forum with contractors and other partners to share information, seek feedback on CEWO program changes, and encourage input for program improvement opportunities.
- CEWO's statewide High Road Committee adopted a Community High Road Standards and Benefits in January 2010 that establishes high-quality work standards, while ensuring access and support for underserved populations, including people of color, women, the underemployed, veterans and low-income residents. The standards are upheld through minimum requirements for contractors, incentives to encourage excellence, and support for assistance as needed. High Road Standards have been incorporated into all contractor agreements.
- CEWO recently completed work with Worksystems, Inc. (WSI) on a co-funded Job Training Incentive Program. WSI assists in the development of an on-the-job training program, job placement for newly trained weatherization workers, and provide program monitoring and administration services.
- CEWO continues to work with contractors in the Columbia Pacific region (north coast counties of Columbia, Clatsop and Tillamook) develop their skills in home performance.
- CEWO developed and implemented a comprehensive business support program that will augment the contractor selection process. Review of contractor performance and qualifications led to a support pathway that includes one or more of the following:
  - Executive coaching provided by leading contractor experts.
  - Coursework on business systems, accounting, human resources, selling/marketing, etc.
  - For new contractors, mentoring by current top performance contractors.
- During Q2 2013, CEWO began offering contractors and their workforce the opportunity to attend monthly meetings to learn, discuss and share information about technical home performance issues such as foam insulation and radon. The breakfast meetings have been termed "Teckie Breakies" and been well received by CEWO's contractor community.
- CEWO was instrumental in developing a registered apprentice pathway for weatherization technicians/installers. Stakeholders from utilities, non-profits, low-income weatherization programs, private sector Home Performance contractors, weatherization installers, labor unions, and the State of Oregon Apprenticeship and Training Division assisted in these efforts. The State of Oregon Bureau of Labor and Industries approved the apprenticeship program October 22, 2013.

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## Task 6.0 Ensure Project Monitoring and Verification

- CEWO has created the pathway for monitoring energy usage and performance data from retrofit projects; actual analysis will be performed over time as information becomes available. CEWO's homeowner application process provides for authorization of the collection energy usage data through utility companies. The City of Portland's Bureau of Planning and Sustainability is currently assisting CEWO in attempting to obtain utility information from local service providers, see section above on Utility Usage Data.
- Energy Trust of Oregon conducts periodic impact and process evaluations using third party firms. In 2013 savings for CEWO projects were verified by Energy Trust evaluators and showed that the program delivers the reported savings, though total resource cost effectiveness continues to be an issue.
- In CEWO's regular customer satisfaction surveys they are consistently ranked highly on measures of customer satisfaction.

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## Task 7.0 Ensure Project Management and Reporting

- The City of Portland, CEWO and key partners have developed a reporting protocol to ensure that the City of Portland is able to comply with USDOE and ARRA reporting deadlines and requirements. Through the IT platform, CEWO is able to collect, warehouse and track much of the data to streamline our overall reporting capabilities. Data is not stored in one repository making the reporting process arduous at best. CEWO's systems analyst recently developed a program for extracting data from project workbooks, the workforce database and the IT platform into a comprehensive database for simplified retrieval and analysis.

# Challenges

A few key challenges have crystallized over the past few years. CEWO's largest challenge for the program was the short duration of the Better Buildings grant and the prohibition on generating income prior to expending all federal funds. The grant was awarded to the City of Portland in April 2010 and the sub-grant was awarded to CEWO in July 2010. CEWO faced the simultaneous challenges of establishing a brand new nonprofit organization and its policies and procedures, while also completing program development, marketing materials, and the unified service delivery system. CEWO was fortunate to have the City of Portland Clean Energy Works Portland program to build on, expediting the work necessary to launch the program March 15, 2011. Program deliverables were extensive given the short time frame in which to complete the work and with limited contractor capacity. Transforming the home performance industry to adoption by homeowners and recognition of energy efficiency loans as viable by lenders is a long term process. While CEWO made significant strides in transforming the market, there is still much to be done.

Creating a self-supporting organization within a three year time frame was a lofty goal. CEWO has developed relationships with contractors and lenders that may enable it to turn the activities of the program into revenue generating activities, but there will be a period of time for adoption. CEWO must transition from an organization that has provided significant incentives to move homeowners toward an energy efficiency upgrade, paid contractors for performing test-in audits and for selling the home energy retrofit, and provided loan origination fees and loan loss reserves to lenders to an organization that is now asking contractors, lenders and homeowners to pay for services. This transition must happen over time such that the value proposition is realized and recognized. State funding is essential to enable CEWO to make this transition.

Another notable challenge is utility participation. With more than forty utilities across Oregon, the variability of utility engagement is a major stumbling block to reaching full statewide presence. Being able to fold the value of utility incentives into instant rebates – and knowing that CEW will get reimbursed for their value – is a key piece to scaling the offering, yet it relies on a uniform contracting approach. Adding to the variability, incented measures are often different from utility to utility. Underlying this challenge is a regulatory framework that is unprepared and slow to react to the interest of the public and private sector in the energy efficiency field.





# Program Sustainability Plans

CEWO plans to continue operations under the dba Clean Energy Works (CEW). The organization is focused on growth in the residential sector and creating living-wage jobs through increased volume.

CEW program sustainability is dependent on state funding and the success of its untested revenue model. The revenue model developed by CEW, which includes charging contractors, homeowners, lenders and utilities for services offered by the organization will enable sustainability by fiscal year 2017-2018.

CEWO’s revenue model eventually relies on adding home retrofit services beyond Home Performance. Seismic upgrades, radon mitigation, solar energy, water conservation retrofits and electric vehicle infrastructure delivery are all contemplated in CEWO’s strategic plan for three years from now. The IT platform that CEWO invested in and built thanks to the BBNP grant can be leveraged and used to add these services to CEWO’s portfolio. Figure 2 and 3 show CEWO’s changing revenue model through 2015.

CEWO was awarded \$9.8 million during the Oregon State legislative session completed in July 2013; \$4.8 million was later vetoed by the Governor due to sourcing of the funds. Governor Kitzhaber’s office is committed to replacing these funds for CEWO in the next session beginning in February 2014.

The loan sale that closed in early December 2013 will help CEWO continue its operations until State funding options become clearer.

For the foreseeable future, lenders have committed more loan capital to the program than is presently needed and have expressed their desire to continue as program lenders, expanding to additional geographical areas. Craft 3 is committed to continuing as CEWO’s on-bill lender. While lending capital is critical to the program, more important is CEWO’s ability to generate revenue sufficient to support business operations.

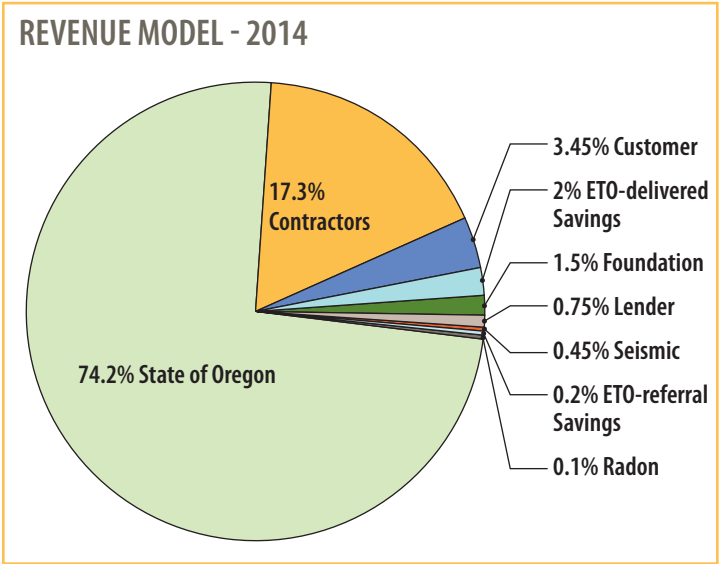


Figure 2: CEW’s 2014 revenue model is still heavily funded publicly. Instead of federal grant funding the organization will largely rely on the State of Oregon.

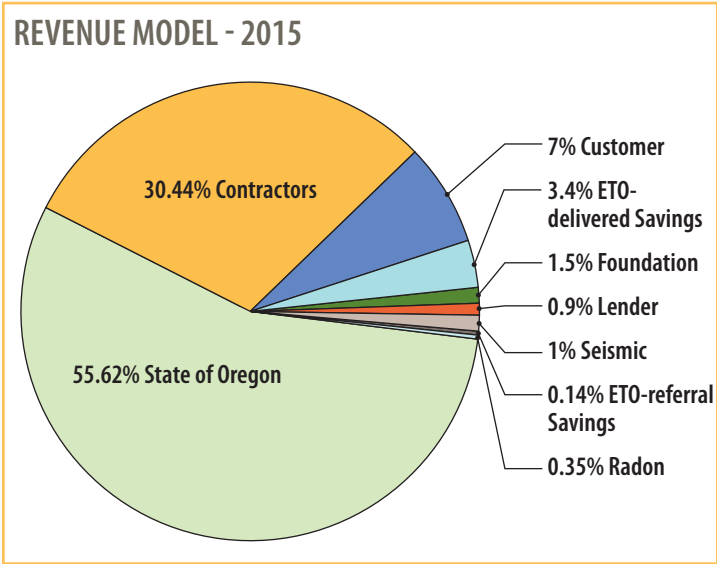


Figure 3: By 2015 CEW will be shifting to a revenue model that is much more dependant on payments made by contactors and customers.

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# Verification of Data

Quarterly information for USDOE is compiled from a variety of sources: CEWO's IT platform, CEWO's lenders, CEWO's workforce data base and project information. Through December 2012, project information was provided by Conservation Services Group and beginning January 1, 2013, project information is provided by CEWO's project workbook. Data is merged by CEWO's Systems Analyst/Developer and then reviewed for missing information and inconsistencies by CEWO's Energy Advisors and Financial Analyst.

Quarterly programmatic is compiled by CEWO's Financial Analyst utilizing information from CEWO's financial accounting software and input from the City of Portland.

Because of the number of sources for information and the manual nature of the compilation of data, there are many opportunities of errors in reporting. Review of data by DOE often identified areas where further review of the data is necessary. In most cases, the data from CEWO's information sources was incomplete and/or unavailable. Additionally, issues in reporting arose with ongoing changes to the data reporting template and the need to import cells in the exact same format as included in the excel drop down menus. The data reporting template worked best if data was manually input to each cell; however, this was not a practical solution due to the volume of projects.

## Developed Products

**Publications:** CEWO was featured in a number of magazine and newspaper articles over the course of the grant term.

### Website or Other Internet Sites Reflecting Results of the Program

CEWO's website address is [cleanenergyworksoregon.org](http://cleanenergyworksoregon.org).

CEWO created a reporting site for access by staff, program funders, and utilities to have a view into program activities in their jurisdiction/trade area. The reporting site is password secured and provides data regarding applications received, project stage and average project cost.

### Networks or Collaborations Fostered

CEWO is a sponsor of the Home Performance Contractors Guild of Oregon (the Guild). The Guild is a consortium of dedicated, highly qualified companies working to educate and serve consumers, contractors, and policy makers. CEWO utilizes the Guild as a sounding board for possible programmatic changes. CEWO recently became a sponsor of Home Performance Washington, an organization similar to the Guild that works to ensure the State of Washington Home Performance contractors are trained and certified in building science.

CEWO has developed a relationship with the Oregon Tradeswomen Association and helped to place workers trained through their program into weatherization positions with CEWO contractors. During 2012 and 2013, CEWO partnered with Worksystems, Inc. help entry level workers access opportunities for weatherization training, employment planning and on-the-job training.

### Technologies/Techniques

CEWO worked closely with Evoworx, Inc. dba Energy Savvy (ES) to develop unified service delivery platform to manage the retrofit process from application to completion. The software program provides interfacing with the homeowner, contractor and lender enabling each to document progress through the CEWO program. The program is owned by ES; CEWO licenses the software and pays for development of platform features specific to CEWO. Energy Savvy has benefited from CEWO's input to the service delivery platform and has incorporated many of CEWO's ideas into the core functions.

CEWO also worked closely with Earth Advantage (EA) during late 2012 and early 2013 to develop a method for the transfer of retrofit data to EA for the preparation of an energy audit report and energy performance score (EPS). The energy audit and EPS are surfaced to CEWO's customers as part of the retrofit process. CEWO pays a licensing fee to EA for use of the software and additionally pays a per unit fee to obtain the energy audit and EPS.

CEWO's Director of Building Science recently completed development of a deemed energy savings tool utilizing Excel that provides an estimate of energy savings from review of data compiled during the test-in audit of each home. The savings tool is for CEWO internal use; design and code is not copyrighted.

# APPENDIX

The following is a compilation of marketing materials that have been developed by CEWO. The materials consist of direct mail letters providing special incentive offers, post cards, displays, a door hanger, brochures and yard signs. The materials are presented in chronological order and show the evolution of the message and branding over the last three years.



Brought to you by Clean Energy Works Oregon, in partnership with the City of Portland

February 24, 2011

Dear Neighbor,

You're invited to become an "early bird" participant in Clean Energy Works Oregon. Transform your house into a more comfortable and energy efficient home – with zero money down. As an added bonus, if you are one of the first 250 qualified applicants you could receive up to \$4,700 in total savings!

Clean Energy Works Oregon (CEWO) is building on the successful Portland pilot that helped 500 homeowners finance energy remodeling projects that increased their home's comfort while reducing their energy usage.

CEWO will be available to the public mid-March 2011, but with this special offer you are eligible to apply early and secure your savings.

**Clean Energy Works Oregon early bird participants get:**

- Exclusive offer to **reserve your spot** before the general public.
- A FREE 4-hour **home energy assessment** (\$500 value)
- Energy saving upgrades such as **insulation, air sealing, high-efficiency heating equipment, and windows** installed by the certified contractors.
- A dedicated **Energy Advisor** to guide you through the process.
- No Fee Financing. Upgrades are financed with a low-cost, long-term loan that is repaid on your monthly heating bill.
- **Up to \$4,700** in cash and value for your project.

**Secure Your Savings**  
Don't miss this opportunity to secure up to \$4,700 in savings.

Apply online at: [www.CleanEnergyWorksOregon.org/EarlyBird](http://www.CleanEnergyWorksOregon.org/EarlyBird)  
To request a paper application, call 503-546-8766.

Sincerely,  
  
Andria Jacob  
Program Manager, City of Portland

**A Special Invitation!**

<b>SPECIAL SAVINGS</b> For the first 250 qualified applicants <sup>1</sup>
<b>INSTANT REBATE</b> Based on home's estimated energy savings <b>\$1,500 - \$3,200</b>
<b>NEIGHBORHOOD GRANT</b> For homes in the Lents Town Center and Interstate URA's <sup>2</sup> <b>\$1,000</b>
<b>FREE ENERGY ASSESSMENT</b> <b>\$500 value</b>
<b>NO FEE FINANCING</b> <b>Zero loan fees</b>
<b>UP TO \$4,700 IN TOTAL SAVINGS!</b>

urnace and adding insulation can make your home a lot ear round. But in these tough times, writing a big check to des just isn't an option for many homeowners.

ean Energy Works Oregon, you don't have to write a check ther monthly bill to make your house more comfortable . That's because the costs are financed through low hat appear right on your utility bill. And improved energy rtially offset these costs, making a more comfortable able reality.

k?  
hical team tests your home's energy efficiently and grades.  
e a low-cost loan with monthly payments that appear right ill. As an early bird, you could get up to \$4,700 in total

ified contractors transform your home into a high rgy efficient and comfortable living space.  
enjoy a more comfortable home that's cooler in the rmer in the winter.

s (Terms and conditions apply)  
-20 years amortized  
99%  
o loan signing or early pre-payment fees  
onthly payments through your heating utility bill

**rgy Works Oregon**  
Oregon (CEWO) is a non-profit organization created by Planning and Sustainability to simplify the transformation energy efficient, comfortable homes for the future.  
ivate partnership with the City of Portland, Energy Trust of is and regional financial institutions. This effort is funded r, \$20 million grant funded by the American Recovery and

[www.CleanEnergyWorksOregon.org/EarlyBird](http://www.CleanEnergyWorksOregon.org/EarlyBird)

1 This offer is available to the first 250 qualified applicants. Terms and conditions apply. For complete details and eligibility requirements visit: [www.CleanEnergyWorksOregon.org/EarlyBird](http://www.CleanEnergyWorksOregon.org/EarlyBird)

2 Our records indicate that you live within the Interstate Corridor or Lents Town Center Urban Renewal Area (URA), geographic areas designated by the Portland Development Commission for economic development opportunities. Qualified applicants to Clean Energy Works Oregon that live in one of these two areas are eligible for a \$1,000 instant Neighborhood Grant. For more information on the these URA's visit: [www.pdc.us/ura/](http://www.pdc.us/ura/)



Funding for this program is provided by the American Recovery and Reinvestment Act.

Early Bird Letter – February 2011



PLACE PARTNER STICKER HERE

clean energy works oregon

place stamp here

**GET AN ENERGY EFFICIENT MAKEOVER FOR YOUR HOME**  
Without making over your budget

No Money Down Financing. Instant Rebates up to \$3,700.\*\*  
**APPLY NOW**  
at CEWO.org using the code below:

PLACE INSTANT REBATE CODE STICKER HERE

\* Loan repayment through heating bill may not be available in all CEWO service areas.  
\*\* Pending your approved application and completion of program. © 2011 Clean Energy Works Oregon Inc. All Rights Reserved.

Working with Energy Trust of Oregon

**YOUR HOME DOESN'T HAVE TO ACT ITS AGE**

**A HOME ENERGY REMODEL makes a 1920's Craftsman function like it was built yesterday**

ON-DEMAND HOT WATER HEATER • TRIPLE-PANE WINDOWS  
HEATING SYSTEMS • AIR AND DUCT SEALING • INSULATION

**NO MONEY DOWN • INSTANT REBATES up to \$3,700\*\***  
A low fixed interest rate loan payable through your heating bill\*

The Williams Family  
Insulation turned rooms from cool to cozy



Postcard – Spring 2011

clean energy works oregon

PLACE PARTNER STICKER HERE

**Introducing A HOME ENERGY REMODEL**  
**NO MONEY DOWN • INSTANT REBATES up to \$3,700\***

**1 > WHAT'S INVOLVED**  
We've been selected by Clean Energy Works Oregon (CEWO) to transform homes into efficient, energy-saving machines, including:  
TANKLESS HOT WATER HEATER • TRIPLE-PANE WINDOWS  
STATE-OF-THE-ART HEATING SYSTEMS • AIR AND DUCT SEALING • INSULATION

**2 > NO GUESSWORK**  
• FREE Home Energy Assessment conducted by our certified team will pinpoint areas where your home is wasting energy – that's a \$500 value.  
• An Energy Advisor from Clean Energy Works Oregon will provide you with objective guidance through the process.

**3 > SIMPLE, AFFORDABLE FINANCING**  
No money down financing is part of the package. A low fixed rate loan payable through your heating bill\* is available along with incredible savings.  
Only 500 homeowners in the Portland metro area and 250 elsewhere will qualify for Instant Rebates! **WHEN THEY'RE GONE, THEY'RE GONE!**

**INSTANT REBATES UP TO \$3,700**  
–\$3,200 Energy Upgrades\*\*  
–\$500 Home Energy Assessment  
No Fee Financing

**APPLY NOW**  
to reserve your savings  
at CEWO.org with the code below:

PLACE INSTANT REBATE CODE STICKER HERE

Questions? Visit [cewo.org](http://cewo.org) or call 1.855.870.0049.

\* Instant Rebates are contingent upon application approval and program completion, are available on a first-come, first-served basis, subject to change without prior notice, non-transferable and will only be reserved for a qualified applicant for a limited time. Instant Rebates include federal, state and local resources and standard Energy Trust cash incentives.  
\*\* Loan repayment through heating bill may not be available in all CEWO service areas. \*\*\* Based on 30% modeled energy savings. Lower modeled energy savings are eligible for lower Instant Rebates.

Working with Energy Trust of Oregon

Flyer – Spring 2011



## CEWO IS 4 EASY STEPS.

- 1. APPLY.** It's easy and free at [CEWO.org](http://CEWO.org). If approved, you'll get no-money-down financing and a loan you can repay through your heating utility bill. (Repayment option not available in all areas)
- 2. ASSESS.** Your energy assessment removes the guesswork by pinpointing your home's energy saving opportunities.
- 3. TRANSFORM.** Watch your older home work like new by upgrading to new insulation, R5 windows, high-efficiency home heating systems, and more.
- 4. ENJOY.** Saving energy never felt so good. You've got a more comfortable home that's cooler in the summer and warmer in the winter. **YOU'VE JOINED THE FUTURE!**

## FROSTY TO COZY

A '50s HOME JOINS THE FUTURE




JOIN THE FUTURE AT [CEWO.ORG](http://CEWO.ORG)

## ENERGIZING THE ABELLERA-GINGER HOME

No way was Almira and Kevin's first home going to be a fixer-upper. Not their idea of a good time. So they picked a solid little charmer from the 1950s, a one-story house with good bones. Oh, but how those bones shivered on cold winter nights, with only shingles to stop the wind. And the young homeowners inside had to huddle in the living room surrounded by space heaters because their bedroom was too cold. "We'd wear blankets just to walk around the house," they said.

In came CEWO to assess and address what the shivering household needed: Wall and floor insulation, air sealing for nooks and crannies, and all the baseboards pulled off so caulking and foam could go in. Almira and Kevin then chose a deluxe heat pump system, 100% electric, and all this just in time for their first child. "And when we buy our next home," says Kevin, "the cosmetics will come second. We're going to be looking at energy efficiency first."

“We now heat our whole house for less than we paid to heat half of the house. WE’RE TALKING UP THE PROGRAM TO OUR FRIENDS AS MUCH AS WE CAN.”

“Our houses here are close together so we’d hear the neighbors. Since we’ve done the full envelope of insulation, we’ve noticed it’s really DAMPENED THE OUTSIDE SOUND.”

“We called our home the Big Mac house. THERE WAS A HOT SIDE AND A COLD SIDE. We’d have to sequester ourselves in the front and close off the back in the worst of both winter and summer!”





DUCTLESS HEAT PUMP SYSTEM  
WALL AND FLOOR INSULATION  
AIR SEALING NOOKS AND CRANNIES  
CAULKING BEHIND BASEBOARDS

## CEWO IS 4 EASY STEPS.

- 1. APPLY.** It's easy and free at [CEWO.org](http://CEWO.org). If approved, you'll get no-money-down financing and a loan you can repay through your heating utility bill. (Repayment option not available in all areas)
- 2. ASSESS.** Your energy assessment removes the guesswork by pinpointing your home's energy saving opportunities.
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- 4. ENJOY.** Saving energy never felt so good. You've got a more comfortable home that's cooler in the summer and warmer in the winter. **YOU'VE JOINED THE FUTURE!**

## ENERGY SAVVY TO ENERGY SAVED

A '40s BUNGALOW JOINS THE FUTURE

JOIN THE FUTURE AT [CEWO.ORG](http://CEWO.ORG)

## ENERGIZING THE OPDYKE HOME


Patt Opdyke is a self-confessed energy geek. While others count calories and watch their weight, she counts her kilowatts and therms. Measurement units, like cubic feet per minute, or CFM, put her right over the moon. You can just imagine how the conversation thrilled her when CEWO experts evaluated her house for drafts. "They felt around the top of the door frames," remembers Pat, "and one would say, 'Oh, I have half CFMs here.' And the other would say, 'I have two.' I loved it!" said Patt.

Patt knew exactly what her 1942 bungalow needed and got what she wanted: a top of the line, energy-saving furnace and a super-efficient water heater; more highly rated insulation ("I went from R-30 to R-49"); an end to daylight cracks in the basement and all the ducts sealed. Always concerned about saving energy, Patt's just as delighted not to waste her cash. Kicking back into retirement in a house that's joined the future, she's spending less time and money on kilowatts and therms, and more time leading a richer, more comfortable life.

“I thought I would be more out-of-pocket because I had a lot of work done. And that hasn’t been the case. My gas bill in winter is the same as it was before, even with paying off the loan.”

“I think it’s an EXCELLENT PROGRAM, particularly the way it’s packaged. IT WAS SO EFFORTLESS. I mean, it was dead easy. Just went down and signed the papers.”

“I have a lot of places I’d like to spend my money. And it isn’t spending it wastefully on gas and electricity. I’D RATHER SPEND IT ON THE GARDEN.”



HIGH-EFFICIENCY GAS FURNACE AND WATER HEATER  
R-30 TO R-49 INSULATION  
BASEMENT AND DUCTS SEALED

## CEWO IS 4 EASY STEPS.

- 1. APPLY.** It's easy and free at [CEWO.org](http://CEWO.org). If approved, you'll get no-money-down financing and a loan you can repay through your heating utility bill. (Repayment option not available in all areas)
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- 4. ENJOY.** Saving energy never felt so good. You've got a more comfortable home that's cooler in the summer and warmer in the winter. **YOU'VE JOINED THE FUTURE!**

## AIRY TO AIRTIGHT

A '50s HOME JOINS THE FUTURE




JOIN THE FUTURE AT [CEWO.ORG](http://CEWO.ORG)

## ENERGIZING THE WILLIAMS' HOME

John and Jennifer Williams lived in an extraordinary house. It had more holes than Swiss cheese. In winter, gusts of cold wind blew into their bedroom, under their blankets, and in between their toes. In summer, that bedroom became a sauna, turning their sheets into a soggy mess. "We need to do something," cried the Williams. "Let's get insulation and install it ourselves." They bought big, pink bales and dragged them up to the attic. A year later, they unloaded them at a garage sale. "The heck with it," said John.

Then, as fate and good marketing would have it, the couple discovered CEW and handed their problems over to pros. Just like that, everything they'd avoided doing was done: The external walls and crawl spaces are now snug with installation, and they upgraded from a gas to an electric water heater. "Heats up more quickly!" they said. Today, their house is even more extraordinary - airtight, energy efficient, and oh so kind to their toes.

“We never saw ourselves as poster children for clean energy or energy efficiency, but it works. THE PRINCIPLES ARE SOUND.”

“We were throwing money out the window on air-conditioning. I mean it’s great that we’re helping out the earth, but our decision wasn’t about a philosophy. WE HAD A PROBLEM AND WE HAD TO FIX IT.”

“The loan process almost seemed TOO EASY!”



EXTERNAL WALLS + CRAWL SPACES INSULATED  
HIGH EFFICIENCY ELECTRIC WATER HEATER  
MONEY STAYS PUT INSTEAD OF FLYING OUT WINDOWS

Testimonial Postcards – Spring 2011



Tri-fold Displays – June 2011



Yard Signs – June 2011



**FINAL  
REMINDER!**

DON'T MISS  
UP TO  
**\$2,000\***  
INSTANT  
REBATES  
INSIDE



NON-PROFIT ORG.  
US POSTAGE  
PAID  
PERMIT NO. 361  
PORTLAND, OR

# HOMES ARE FOR SHELTER NOT SWELTER

## BEAT THE HEAT

If you're boiling in the summer and freezing in the winter, your home's not protecting you from the elements. CLEAN ENERGY WORKS OREGON (CEWO) finds the culprits that cause sticky summers and weary winters – like cracks, worn-out insulation and leaky windows. Then, CEWO transforms your home into a super, energy-efficient home that keeps you comfy every day with:

- INSTANT REBATES UP TO \$2,000\*
- NO-MONEY-DOWN FINANCING
- FREE HOME ENERGY ASSESSMENT (\$500 value)
- CERTIFIED CONTRACTORS

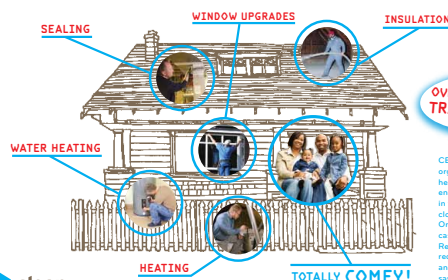
→ **APPLY NOW AT [cewo.org](http://cewo.org)**

Save up to **\$2,000\*** with  
INSTANT REBATE code: **CEDMLSNS2**

\*Instant Rebates are available on a first-come, first-served basis, subject to change without prior notice, non-transferable and will only be reserved for a qualified applicant for a limited time. Instant Rebates include federal, state and local resources and standard Energy Trust cash incentives.

PRINTED ON RECYCLED PAPER

## WITH A CEWO HOME ENERGY REMODEL



**OVER 1,500 HOMES  
TRANSFORMED**

CEWO is a non-profit organization dedicated to helping homeowners achieve energy efficiency and comfort in their homes. CEWO works closely with Energy Trust of Oregon, which offers standard cash incentives as Instant Rebates through CEWO to reduce the total project cost and help customers access savings on energy projects.



**FINAL  
REMINDER!**

GET UP TO  
**\$2,000\***  
INSTANT  
REBATES  
INSIDE



NON-PROFIT ORG.  
US POSTAGE  
PAID  
PERMIT NO. 361  
PORTLAND, OR

# MONEY IS LEAKING out of your HOUSE



## KEEP CASH FROM FLYING AWAY

Living in a home that leaks like a sieve and burns money running outdated equipment can really cost you. Transforming your home into a cost-efficient, energy-saving home of the future with CLEAN ENERGY WORKS OREGON (CEWO) is super easy with:

- INSTANT REBATES UP TO \$2,000\*
- NO-MONEY-DOWN FINANCING
- FREE HOME ENERGY ASSESSMENT (\$500 value)
- CERTIFIED CONTRACTORS

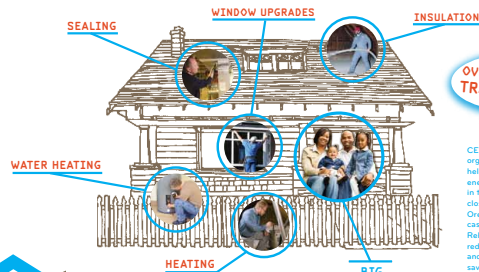
→ **APPLY NOW AT [cewo.org](http://cewo.org)**

Save up to **\$2,000\*** with  
INSTANT REBATE code: **CEDMLEAK2**

\*Instant Rebates are available on a first-come, first-served basis, subject to change without prior notice, non-transferable and will only be reserved for a qualified applicant for a limited time. Instant Rebates include federal, state and local resources and standard Energy Trust cash incentives.

PRINTED ON RECYCLED PAPER

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## IS THIS YOUR WARM AND HAPPY PLACE?



MAKE YOUR HOME ENERGY CONFIDENT



## MAKE YOUR HOME ENERGY CONFIDENT WITH A HOME ENERGY REMODEL

**Certified Contractors** trained in home energy efficiency

**No guesswork** with a FREE Home Energy Assessment (worth \$500)

**Multiple energy upgrades** in one stop: insulation, windows, heating systems and more

**Independent inspection** to ensure work performs as promised

APPLY at [cewo.org](http://cewo.org) by \_\_\_\_/\_\_\_\_/\_\_\_\_  
to save up to \$\_\_\_\_\_ with  
**INSTANT REBATE CODE**



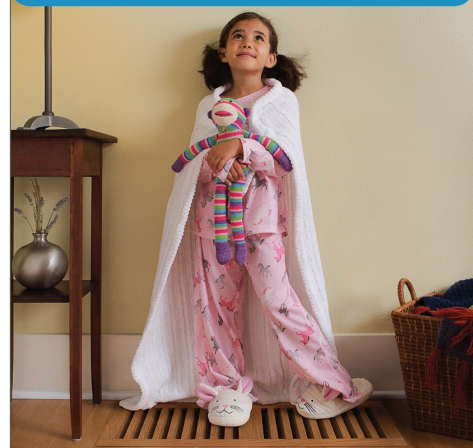
[cewo.org](http://cewo.org)

"The house certainly feels  
quieter, cozier and warmer."  
— Brian Burk, Portland



Postcard – Fall 2012

## IS THIS YOUR WARM AND HAPPY PLACE?



## MAKE YOUR HOME ENERGY CONFIDENT



ENERGY ASSESSMENT



CERTIFIED CONTRACTORS



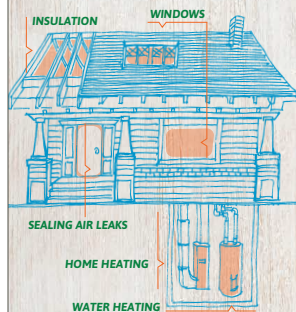
INDEPENDENT INSPECTION



a registered 501(c)(3) non-profit

[cewo.org](http://cewo.org) 855.870.0049

## MAKE YOUR HOME ENERGY CONFIDENT



**NO MONEY DOWN**  
**INSTANT REBATES**  
up to  
**\$2,000\***  
(See back for details)



Door hanger – Fall 2012

Display Pop-up Banner – Fall 2012



## YOUR DINNER JACKET SHOULDN'T BE INSULATED



### MAKE YOUR HOME ENERGY CONFIDENT WITH A HOME ENERGY REMODEL



2435 N Lombard Street, Portland, OR 97227  
greenenergyworksoregon.com  
CEW# 123456

### MAKE YOUR HOME ENERGY CONFIDENT

To get comfortable, you've had to get creative. Time to do better: reclaim the comforts of home with the help of Clean Energy Works Oregon (CEWO). We are energy efficiency pros working with Energy Trust of Oregon, utilities, Certified Contractors and local lenders who make Home Energy Remodels happen. A FREE Home Energy Assessment pinpoints energy waste, then your upgrade team gets to work. When it's complete, your improvements are inspected to verify performance – and your home's comfort is transformed.

#### A HOME ENERGY REMODEL FROM CLEAN ENERGY WORKS OFFERS:

- **Certified Contractors** trained in home energy efficiency
- **No guesswork** with a FREE Home Energy Assessment worth \$500
- **Multiple energy upgrades** in one stop: insulation, windows, heating systems and more
- **Independent Inspection** to ensure work performs as promised worth \$250



"This winter has been so much more comfortable. My house is warmer and I've been spending less money to heat it."  
– Alden Boetsch, Portland

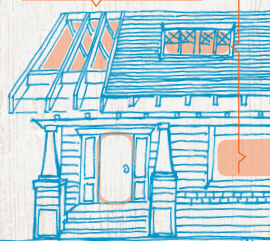
### TRANSFORM YOUR HOME'S COMFORT IN ONE STOP

#### INSULATION

Installing insulation in walls, crevices and gaps keeps heat from escaping in winter and entering in summer, dramatically reducing your heating and cooling usage.

#### WINDOWS

Replacing leaky windows with energy-efficient windows, such as R-5 to regulate



#### SEALING

Sealing outside walls, doors, ceilings, windows and floors controls moisture, reduces drafts and prevents energy from escaping with your money.

#### WATER HEATING

Switching to a more efficient water heater with a higher "Energy Factor" number can cut your water heating costs in half.

#### HOME HEATING

Upgrading your furnace system can boost efficiency to 90% energy use and more.

cewo.org

## GET ENERGY CONFIDENT IN FOUR EASY STEPS

Join thousands of Oregonians who have already transformed their homes with Clean Energy Works Oregon

- 1 **APPLY** at cewo.org. Or, call toll-free at 1-855-870-0049.
- 2 **ASSESS** means no guesswork with a FREE Home Energy Assessment (worth \$500) that pinpoints your home's energy waste.
- 3 **FINANCE** with no upfront costs and optional no-money-down financing through our local lending partners.
- 4 **TRANSFORM** your home to a comfortable, energy-efficient retreat.

APPLY at cewo.org by 11/30/12 to save up to \$2,000\* with

INSTANT REBATE CODE

C N I E N 1 2 3

\*Instant Rebates are available to qualified applicants that complete CEWO upgrade projects on a first-come, first-served basis, are subject to availability, non-transferable and subject to change without prior notice. See cewo.org for additional restrictions.



cewo.org

Brochure – Fall 2012



Bureau of Planning and Sustainability  
Innovation. Collaboration. Practical Solutions.

## REBATE NOTIFICATION



\*\*\*\* 5-DIGIT 97227

Randy Murray  
2245 N Vancouver Ave  
Portland OR 97227-1920

Dear [First Name] [Last Name],

The City of Portland has identified your home as a candidate for Instant Rebates up to \$2,100\* and no-money-down financing when you install home energy upgrades through Clean Energy Works Oregon (CEWO). Apply by April 30, 2013 and you will qualify for an extra \$100\*\* bonus for a total of \$2,100 in savings.

Clean Energy Works is a non-profit working with Energy Trust of Oregon, utilities, lenders and local governments to help Oregonians make their homes more comfortable and energy efficient.

Thousands of Portland homeowners have already benefited, including Nathan and Amy Goff who transformed their Portland home with attic insulation, new windows and air and duct sealing and say, "We are not having to run our heat nearly as much, as our home stays warmer a lot longer. Overall it's just more comfortable."

Join the Goffs and save up to \$2,100 when you apply by April 30, 2013 at cewo.org with Instant Rebate Code: CEDMLBP2. Once you are accepted, Clean Energy Works will guide you through a process that includes:

- **Certified Contractors:** participating contractors specially trained in home energy efficiency
- **No Guesswork:** a FREE high-tech Home Energy Assessment (worth \$500) to pinpoint your home's energy waste
- **One-Stop Convenience:** insulation, windows, heating systems and more bundled into one convenient project
- **Independent Inspection:** once your energy upgrades are installed, Clean Energy Works will perform a FREE independent inspection (worth \$250)



a registered 501(c)(3) non-profit

Transform your home today and make this your last winter living in a drafty house. Remember to apply with Instant Rebate Code CEDMLBP2 to qualify for a \$100 bonus and total savings up to \$2,100. Or contact Clean Energy Works toll-free at 1-855-870-0049 for more information.

Sincerely,

*Andria Jacob*

Andria Jacob  
Program Manager

\*Based on 30% energy savings. Instant Rebates are available to qualified applicants that complete CEWO upgrade projects on a first-come, first-served basis, are subject to availability, non-transferable and subject to change without prior notice. See cewo.org for additional restrictions.

\*\*Offer is available only to new applications received by CEWO between 4/1/2013 and 4/30/2013.



City of Portland, Oregon | Bureau of Planning and Sustainability | www.portlandonline.com/bps  
1900 SW 4th Avenue, Suite 7100, Portland, OR 97201 | phone: 503-823-7700 | fax: 503-823-7800 | tty: 503-823-6868



BPS Rebate Notification Letter – April 2013



1,700 SQUARE FOOT HOME.  
2 SQUARE FEET OF WARMTH.  
*Not okay.*



The end of drafts, cold spots, and chilly rooms **begins** with a **home energy assessment** from Clean Energy Works. [cewo.org/cs](http://cewo.org/cs)



*As a friend of Climate Solutions you are eligible for an extra \$100 off your project through 11/30/2013*

Must complete application by Nov. 30, 2013 for this special offer. Instant Rebate is subject to availability, and is for qualified applicants who complete upgrades through CEWO. Instant rebates may include federal, state and local resources and standard Energy Trust and/or utility cash incentives. Some restrictions apply. Visit [cewo.org](http://cewo.org) for details.

Warm Spot Climate Solutions – Fall 2013

## TRANSFORMING HOMES. TRANSFORMING COMMUNITIES.

### CREATING EQUITY AND OPPORTUNITY:



**55%**

TRADE/TECH. HOURS WORKED BY  
PEOPLE OF COLOR AND WOMEN



**\$21**

AVERAGE WAGE PAID



**81%**

OF EMPLOYERS PROVIDE HEALTH  
INSURANCE

### FOR EVERY 100 CEWO PROJECTS:

**260 METRIC TONS OF CARBON DIOXIDE  
EMISSIONS ARE PREVENTED, EQUIVALENT TO:**



**600**

BARRELS OF OIL



**29,148**

GALLONS OF GASOLINE



**667**

TREES PLANTED



Poster – Fall 2013