

# Toward a Sustainable



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[www.clackamas.us/sustainability](http://www.clackamas.us/sustainability)



## Citizen Task Force crafts a vision for the county's efforts; recommends near-term actions

It's bold and it sets the bar very high, but a group of hard working county citizens believe it can be done. The 16-member citizen task force established to draft a sustainability action plan for Clackamas County has chosen its vision for the county's work: *Clackamas County is a model for applications of sustainable living.* Toward that vision, the task force recently presented the Board of County Commissioners with a framework that includes seven goals for 2050, and a three- to five-year action plan to set the county on a path toward a more ecologically, socially and economically sound future.

Sustainability means using, developing, and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs. Sustainability requires simultaneously meeting environmental, economic, and community needs.

The task force acknowledged Clackamas County's legacy and sustainability initiatives to date, and recognized the unique cultural and economic value of the County's natural resources. The task force also recognized the importance of local businesses, and strategies for energy and resource independence.

### Finding community partners

In recognition of the many challenges the county faces, including rapid population growth, the task force recommends that the county align with partner organizations, and "fill gaps" where other organizations are not taking or cannot take the lead. "Better, more long-lasting results come about when we involve many people in the process," said Clackamas County Sustainability Supervisor Susan Ziolk. "The task force has helped us define the challenges and now partnerships with many organizations will help us meet them."

## Worried about climate change but unsure about what to do? Flip the switch to 'off' and try something different



It may be because we feel powerless to solve the problem: We can't immediately end our need to burn gasoline and other fossil fuels, even though they are the main source of gases that contribute to global warming and climate change.

Or it may be because we are confused about the problem: The greenhouse gases (GHG) we produce trap extra heat in the atmosphere, but we cannot predict precisely how damaging their impacts will be.

***"Changing our energy practices should be one of our highest priorities. If we care about the world that we will leave for our children and our grandchildren, we will change our energy practices — and do it soon."***

— Dr. Jane Lubchenco  
Oregon State University  
Distinguished Professor of Zoology

One thing we know for sure: The balance of scientific evidence suggests that our use of coal, oil, and natural gas for energy is already having an impact on the climate.

More than 40 percent of greenhouse gas emissions come from commercial and residential buildings. One third of GHG emissions come from the transportation sector.

The Oregon we enjoy today could be a much different place in the future because of climate change. Reconsidering how we use energy will help preserve the natural places and quality of life that have set Oregon apart.

The cheapest, cleanest energy is the energy you decide not to use. So, our first tip in this issue is "turn it off" whenever you can, whether it be lights or vehicles.

In the following pages are some strategies and resources to reduce your energy use and save money while you are at it.

## Carpooling – chat, read the newspaper, and watch the savings pile up

When Clackamas County issued its Carpool Challenge to its employees last year, Traffic Engineer Rick Nys figured there was no way he and his work buddies could lose, since they all lived in the same community. He didn't know how right he was.

By the time the contest was over, Nys' group realized they were hooked. "When we started the carpool, we were basically approaching it in an experimental manner," said Nys. "None of us thought it would last or be convenient enough to continue. It has been remarkably easy."

It's very basic. The carpoolers meet at a central location and take turns driving for a week. They keep track of their schedules via their computer calendars. They chat, read the newspaper, and feel good about saving gas. Last spring, they reduced miles driven collectively by 100 per day — saving four gallons of gas. At \$3.30 per gallon that's roughly \$13 a day — not to mention the wear and tear on their cars. "Most importantly, it feels really good," said Nys.

Carpooling is easier than it seems. "Sure there are the occasional situations where someone needs to drive on his own or where someone else needs to take over duties for a day or two, but we have the system down pat," said Nys. "We keep in touch via personal cell phone and home phone to make sure the driver knows who is out for the day."

### How do you do it?

- Figure out how much you spend on your single-occupant commute
- Start small and expand riders from there
- Do it just a few days a week at first
- Communicate (that's key!)
- If you have an conflict, switch days with someone
- Go to [www.carpoolmatchnw.org](http://www.carpoolmatchnw.org) or Metro Vanpool at [www.oregonmetro.gov/index.cfm/go/by.web/id=23773](http://www.oregonmetro.gov/index.cfm/go/by.web/id=23773)



*Everyone's trying to get a piece of the action*

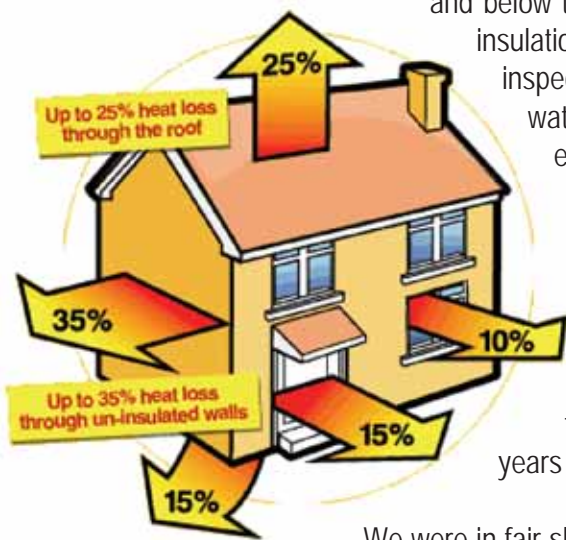
## Contact Energy Trust for a household check-up

By Doug Babb, Lake Oswego resident

Is it time your home and appliances had a comprehensive check-up for energy efficiency? Get one free from the Energy Trust of Oregon. We did and found it to be a great service.

With energy prices rising and a few essential appliances nearing the end of their life cycle, it was time for a top-to-bottom look at our 2,200-square-foot house. The nonprofit group offered a thorough review of our home's energy use, made recommendations for short- and long-term improvements, and provided great tips about discounts and tax incentives for upgrades.

NW Natural referred us to Energy Trust and we made an appointment with a conservation expert. Spending an hour, she examined crawl spaces above and below the house – checking



insulation for heat loss. She also inspected the gas furnace and water heater, and looked at electrical systems and lighting. The economic merit of installing a high-efficiency furnace was discussed but made sense only when it became time to replace the original system -- a few years off.

We were in fair shape, with only minor common-sense changes needed. Installing a low-flush toilet, such as Toto, was recommended if we remodel the master bathroom in the next year or two, as planned. Adding an energy-saving tankless hot water system also was mentioned.

Installing solar panels for heating is an option if we decide to stay in our home for more than five years. But, that appealing suggestion takes time for the economic benefits to pay off, although the conservation benefits would be immediate.

The Energy Trust report card proved to be a great relief and it offered useful recommendations. Plus, the inspector left us with a few free compact fluorescent light bulbs.

Energy Trust of Oregon is a free service for Oregon customers using heat provided by Portland General Electric, Pacific Power, NW Natural or Cascade Natural, which help fund the program. The Oregon Public Utility Commission has charged Energy Trust with investing in cost-effective energy conservation, helping to pay the above-market costs of renewable energy resources and encouraging energy market transformation in Oregon.

Toll-free number, 1-866-368-7878, from anywhere in the state.

Web site: <http://www.energytrust.org/index.html>

Email: [info@energytrust.org](mailto:info@energytrust.org)

*The EPA estimates that if every household in the United States replaced just one incandescent light bulb with a CFL, together we would remove enough pollution from the air to equal removing one million cars from the road.*

## Energy-efficient house combines beauty, comfort and savings

These days a "dream house" is more than just a beautiful place to live – it is an energy-efficient domicile, designed to take full advantage of natural light. Self-employed architect Glen Friedman chose the woodsy Robinhood Neighborhood of West Linn to build his family's dream house in 2003-04. The results have been gratifying.

The carefully planned 2,700 ft. home features a 2.4 kilowatt photovoltaic solar electric system, which saves 20 percent of the energy demand, and a solar hot water system, which saves 40 to 50 percent of the energy that would be used by a conventional hot water system.



"The solar water heating system works so well we don't pay for hot water between June and October," said Friedman, a member of the West Linn Sustainability Advisory Board. A tankless hot water heater serves as a back up. "We are never short of hot water," Friedman added.

Other amenities also helped earn the house its Earth Advantage\* Gold rating. Ninety percent of the appliances are Energy Star\*\*qualified and a lot of "green" materials were used in construction, which accounts for some of the total energy savings.

### Using natural light

Good orientation of the windows, known as day-lighting, provides natural light, saves even more energy, and gives the house more connection with the outdoors. Friedman also placed windows and doors to increase natural cooling of the house, pulling air into downstairs awning-style windows and sending it out through upstairs windows. Elsewhere windows have been strategically lined up for cross-ventilation.

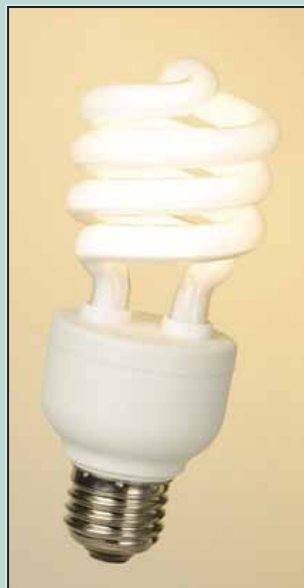
State solar tax credits and Energy Trust of Oregon incentives for solar electricity helped bring costs down, along with energy credits on some of the appliances. For the Friedman family the house is a haven and "the right thing to do."

For those who want to improve an existing home, the first thing to do is have an Energy Trust audit and then attend a SolarOregon workshop, said Friedman, who has been involved in energy-efficient building for 20 years. "Most of all, learn from others and be informed," he added.

\* An Earth Advantage Home® is designed for comfort, value and energy efficiency.

\*\*ENERGY STAR qualified appliances incorporate advanced technologies that use 10–50 percent less energy and water than standard models.

## Light right for home energy savings



Did you know that you can save up to 75 percent of your energy lighting bill by switching to compact fluorescent light bulbs? Energy savings have never been easier. Follow these easy steps to switch out your current light bulbs with CFLs:

1. Take an inventory of your home's lighting needs for size and wattage requirements. The wattage of CFL bulbs is typically 25 percent of incandescent bulbs (the other 75% of the energy used by incandescents creates heat, not light).
2. Purchase CFLs as your budget allows. Start with the lights that are used the most.

CFLs are cheaper than they used to be, as low as \$1-\$2 and they last up to 10 times longer than regular light bulbs, saving you the time and energy you would be spending changing out old incandescent bulbs. Pick bulbs with at least a 10,000 hour life.

Remember to always turn off the lights when they are not needed and keep lighting fixtures clean to get the maximum light output. By reducing your energy use you can lower your energy costs and reduce your impact on the environment.

Energy efficiency just makes sense, and PGE will help. For more energy saving tips visit [PortlandGeneral.com/Energy](http://PortlandGeneral.com/Energy). You also can call one of PGE's home energy specialists, Mon. – Fri. at 503-612-3500.

CFLs do contain a small amount of mercury. But it is much less than the mercury released when making the extra electricity to run inefficient bulbs. Always dispose of used CFLs as hazardous waste - take to a Metro hazardous waste facility or to a Home Depot, Ace Hardware (for a fee), or IKEA store.

# Financial Incentives for Energy Efficiency and Renewable Energy

Numerous regional, state, and federal programs can help citizens and business owners use more renewable energy and become more efficient, cutting energy bills while making homes and businesses more comfortable.

The Energy Trust of Oregon will pay customers of PGE or NW Natural (residential and business) to invest in energy efficiency and renewable energy. Energy Trust, a non-profit funded by all customers through a small surcharge, provides cash incentives for upgrading appliances, insulation, windows, heating ventilation and air conditioning, heat pumps, furnaces, and water heaters, and to install solar electric panels or solar heating panels. It also provides a free in-home energy review, resulting in a customized plan for energy savings. (See *Energy Trust inspection article page 2.*)

## Tax credits galore

Many Energy Trust-eligible projects also can qualify for state and federal income tax credits. The Oregon Department of Energy (ODOE) offers a Residential Energy Tax Credit (RETC) and a Business Energy Tax Credit (BETC).

Take a RETC on personal income tax for the purchase of high-efficiency home appliances (\$50-180), investments in heating and air conditioning (\$160-900), water heating, solar electric systems or solar water or space heating systems (up to \$1,500/year), wind energy (up to \$6,000), or fuel cells (up to \$1,500).

For more information on tax credits contact:  
Oregon Department of Energy (ODOE)  
503-378-4040 or 1-800-221-8035  
[www.oregon.gov/energy](http://www.oregon.gov/energy)

## Federal tax incentives for residents recently extended, modified, or created:

- An income tax credit up to \$500 for upgrades to existing homes including efficient furnaces, boilers, air conditioners, water heaters, insulation, and window upgrades. This covers improvements made in 2009 (not 2008).
- An income tax credit of 30 percent of the cost of installation for solar electric panels, solar water heating, fuel cells, small wind, and geothermal heat pumps — now extended through 2017.

The credit for solar electric panels is now unlimited (previously maxed out at \$2,000). Limits still apply for the other energy sources.

## Other benefits

There are other benefits to installing renewable energy systems at your house or business. Any renewable energy installation cannot be included in the property tax assessment, by Oregon law.

Additionally, for grid-connected solar electricity or wind electricity, the Northwest Solar Cooperative will purchase the green attributes for \$0.02/kWh through 2009 (and possibly beyond). A 2,000 Watt system installed in Clackamas County would generate approximately 2,243 kWh a year, valued at about \$45 per year.

## Examples of what you can save:

### Tankless Gas Water Heater

Purchase Price: \$800 - \$1,200 (not including installation)  
Energy Trust Incentive: \$200  
Residential Energy Tax Credit: up to \$400  
Federal Income Tax Credit: \$300  
Annual Electricity Cost Savings: Approx. \$80

### Energy Star Clothes Washer

Purchase Price: \$540-800  
Energy Trust Incentive: \$100  
Residential Energy Tax Credit\*: \$150-180  
Annual Water and Energy Cost Savings: \$50  
Annual Water Saved: 6,000 to 7,000 gallons  
\*(must also meet ODOE efficiency standards)  
Average savings are based on EPA data.



### Energy Star Refrigerator (replacing a 20 cubic foot refrigerator from 1993-2000)

Purchase Price: \$580-675  
Energy Trust Incentive: \$50  
Residential Energy Tax Credit\*: \$90  
Annual Electricity Cost Savings: \$35  
\*(must also meet ODOE efficiency standards)



### Programmable Thermostat

Purchase Price: \$40-\$80  
Annual Energy Savings: up to \$138  
Incentives: Payback is so quick that no other incentives are needed.

### Solar Electric Panels

These figures are for a typical 2,000 watt home system  
Purchase Price: Approx. \$21,000  
Energy Trust Incentive: \$4,500  
Residential Energy Tax Credit: \$6,000 (over 4 years)  
Federal Income Tax Credit: \$7,000 (30% of cost, no limit in 2009)  
Cost After Incentives: \$3,500  
Annual Electricity Cost Savings: Approx. \$175



### Solar Water Heating Panels (2,400 kWh / year system)

Purchase Price: \$7,500  
Energy Trust Incentive: Average \$720-\$960  
Residential Energy Tax Credit: \$1,440  
Federal Income Tax Credit: \$2,000 (30% of cost up to \$2,000)  
Annual Energy Cost Savings: \$190

## Purchasing new holiday lights?

You can use 90% less electricity by switching from traditional holiday lights to long lasting L.E.D. (light-emitting diode) lights.

The U.S. Energy Department says that, if all conventional incandescent holiday lights in the United States were replaced with L.E.D. lights, annual energy savings would total 2 billion kilowatt-hours — enough to power almost 200,000 homes for an entire year.



## Cash incentives for businesses

Businesses can receive assistance in upgrading commercial appliances, lighting, lighting controls, and solar energy. Those with industrial processes can receive cash incentives for efficient motors, lighting, compressed air, space heating, process steam, conveyers, heating and drying, and refrigeration. Farmers, nurseries, and dairies can receive incentives for more efficient pumps, soil moisture sensors, drip irrigation, and more.

### State energy tax credits

The Business Energy Tax Credit (BETC) reimburses businesses for 50 percent of project costs for renewable energy and combined heat and power (CHP), and 35 percent of costs for energy efficiency projects including lighting, transportation, recycling, truck technology, alternative fuel vehicles or infrastructure, and green building and weatherization.

Additionally, up to \$9,000 is available for homebuilder-installed renewable energy devices and \$12,000 for high performance homes. The BETC is spread over five years. Non-profits and public entities can also participate.

Get expert advice on energy management at PGE's free morning seminars. Check out the schedule at <http://www.portlandgeneral.com/business/default.aspx> and click on News, Classes & Events. Or call 503-464-8020.

### Examples of federal tax credits

- ◆ A tax credit of 30 percent of the cost of solar, fuel cells and small wind, and 10 percent for the cost of geothermal, microturbines and CHP. Limits may apply to the credit for wind and fuel cells.
- ◆ A tax deduction up to \$1.80 per square foot for commercial buildings constructed or reconstructed to save energy, available to owners or tenants, extended through 2013.
- ◆ Accelerated depreciation for smart meters and smart grid systems in addition to other energy investments.
- ◆ Monthly tax-free benefit of \$20 for each employee who bicycles regularly to work (expense deducted from federal taxes).
- ◆ A \$2,000 tax credit for 'eligible contractors' building a new home that achieves 50 percent savings on heating and cooling over the 2004 code — extended through 2009.

## Helpful hints to save vehicle fuel

**Myth #1 – Keeping your tires properly inflated won't save money.**

**Wrong!** It improves gas mileage by at least 3 percent. Getting the heavy junk out of your trunk can save even more.

**Myth #2 – Idling is necessary to warm up your car properly.**

**Wrong!** With today's modern engines, even in cold weather, you need no more than 20 seconds of idling on winter days before driving away. Remember, overall, turn off the ignition and avoid the drive-through.

**Myth #3 – Carpooling is just a hassle.**

**Wrong again!** Carpooling with two coworkers just twice a week can save up to \$300 a year in gas, and your employer just might provide you with a better place to park.



**Myth #4 – Topping off the gas tank is the right choice.**

**Wrong!** Topping off the gas tank can result in paying for gasoline that is fed back into the station's tanks because your gas tank is full, plus chemicals in gasoline vapor, including benzene, escape creating air pollution.

### Web sites show drivers how to save fuel and beat high gas prices

**Drive Less. Save More.** Oregon's and SW Washington's only "one-stop-shop" for driving tips and resources, promotes travel options such as public transit, car pooling, biking and walking, and combining multiple errands into the same trip. This site, [www.drivelessavemore.com](http://www.drivelessavemore.com), helps people find travel options, calculate the savings of those options, share strategies with others, and take a pledge to drive less.

**Drive Smarter**, a national program, offers dozens of money and fuel-saving tips, including decreasing your speed, cutting back the air conditioning, getting a tune-up, and using cruise control on highways. The **Drive Smarter Challenge** is a fun way to calculate the potential savings of smart driving measures – based on the make, model, and year of your car.

Go to [www.drivesmarterchallenge.org](http://www.drivesmarterchallenge.org)

## Businesses see the light

Lighting is a highly cost-effective first step in increasing your business's energy efficiency. Improvements are affordable and offer a quick return on investment. Simply replacing incandescent bulbs with Energy Star® compact fluorescent lights will result in measurable energy savings. CFLs use about two-thirds less energy, last about 10 times as long, and produce much less waste heat than incandescent light bulbs.

For bigger savings, invest in lighting timers and sensors. Every step, no matter how small, makes a difference. Improving your lighting efficiency offers many benefits:

- ◆ Cuts heat gain, reducing loads on heating and ventilation systems.
- ◆ Improves light quality for customer and employee comfort.
- ◆ Creates attractive lighting aesthetics for product display.
- ◆ Gets more light from lower wattage lamps.



According to the Consortium for Energy Efficiency, a high-performance T8 system saves as much as 40 percent in electricity over a traditional T12 system. Lighting improvement costs are repaid quickly in energy savings, sometimes in just a few months. Ask a lighting specialist for a detailed savings analysis when designing your new system.

Evaluating your business's lighting energy use can be your first step in your move to a more efficient future. For ways to increase your energy savings, visit [PortlandGeneral.com/SaveEnergy](http://PortlandGeneral.com/SaveEnergy). You can also contact the PGE Business Services team at 1-800-542-8818 to arrange for a free PGE energy walkthrough.

### Speaking of lighting...

**save more,  
matter more™**



Join over 200 smart, local businesses that have made a pledge to save energy with PGE's "Save more, matter more" campaign and register to win one of five \$3,000 energy-efficient lighting retrofits from PGE and the Energy Trust of Oregon. Collectively, companies like yours can have a big impact, leading the way in reducing our impact on the environment and in powering Oregon's future by saving energy.

## Electric Vehicle charging stations come to Oregon City and Lake Oswego

To help customers be more sustainable, PGE is developing a network of charging stations for plug-in hybrid electric and all-electric vehicles. The move anticipates the plan of car manufacturers to roll out the new generation of plug-in hybrids by 2010.



PGE is working with local businesses and governments to install about a dozen stations throughout the region to help develop and test the transportation infrastructure needed to support plug-in vehicles. Owners of electric vehicles can "plug in" for free at these two new stations:

Oregon City: Main Street, between 12th and 13th  
Lake Oswego: A Avenue, just west of 2nd St.

### Auto buyers - tax credits for you too!

A new federal tax credit between \$2,500 and \$7,500 for plug-in hybrid vehicles purchased starting in 2008 and extending until shortly after the number of qualifying vehicles reaches 250,000. The credit will depend on battery capacity. Credits for regular hybrid vehicles will end in 2010, and are still available for hybrids from most manufacturers, excluding Toyota.

