



# Chapter 5: Local Action Plan Best Bets Businesses

DOCUMENT CONTENTS	
Promote Use of Energy, Water and Waste Audits by Businesses .....	2
CASE STUDIES: .....	
Portland, OR .....	3
Anaheim, CA .....	4
Provide Incentives to Encourage Energy Efficiency Standards .....	4
CASE STUDIES: .....	
Flower Mound, TX .....	5
Scottsdale, AZ .....	5
San Diego, CA .....	6
Energy Efficiency Standards in Commercial Building Codes .....	7
CASE STUDIES: .....	
Santa Monica, CA .....	7
State of California .....	8
Working with Power Plants and Other Significant Emitters .....	8
CASE STUDIES: .....	
State of Oregon .....	9
Seattle, WA .....	10
Help Small Businesses Prosper and Protect the Climate .....	10
CASE STUDY: .....	
Seattle, WA .....	11
Additional Resources .....	12

*In any city, the business sector is a major user of energy, and thus an emitter of greenhouse gases (GHGs). There is a great deal that businesses can do to reduce their emissions profitably, but businesses, especially the small businesses that are the backbone of any community's economy need help to capture these opportunities. Most small businesses give little thought to how they use energy, have few resources to help them reduce their energy bills, and are reluctant to devote scarce management time, or scarcer funds to implementing significant changes in the way they do business.*

*Smart communities around the country are implementing programs to help their business community become more energy efficient.*

*One of the easiest programs to encourage a business to implement is a lighting retrofit. The U.S. Environmental Protection Agency (EPA) offers the ENERGY STAR® program to*

*help business people cut their use of energy.<sup>1</sup> It works with local partners to help businesses implement lighting retrofits and other energy savings programs. The following example is described on the ENERGY STAR® website:<sup>2</sup>*

*Small business owner Joel Whitaker added \$800 per year to the bottom line of Whitaker Newsletters by installing more energy efficient light bulbs in the 24 fixtures in his 2,000 square foot office. The cost was partly financed by his local utility, an ENERGY STAR® Utility Ally, and partly by savings on his electric bill. The upgrades paid back in less than two years. After that even this very small office started saving almost \$800 per year.*

*Mr. Whitaker's utility, Public Service Electric & Gas (PSE&G), sent him a flyer about energy efficient. Soon after calling the utility's 800 number, he signed a Memorandum of Understanding with EPA. Mr. Whitaker had previously called a*

<sup>1</sup> EPA Small Business, [www.energystar.gov/index.cfm?c=small\\_business.sb\\_index](http://www.energystar.gov/index.cfm?c=small_business.sb_index), 30 October 2006.

<sup>2</sup> EPA Small Business Success Story, [www.energystar.gov/index.cfm?c=sb\\_success.sb\\_successstories\\_whitaker](http://www.energystar.gov/index.cfm?c=sb_success.sb_successstories_whitaker), 30 October 2006.

local electrician to learn more about lighting efficiency, but found he knew more than the electrician. EPA's Financing Directory guided Whitaker to Atlantic Lighting and Supply Co., an ENERGY STAR® Distributor Ally. Atlantic surveyed his space for free and provided specifications, a cost analysis, and an environmental analysis. This process took Atlantic less than one hour. Atlantic included PSE&G rebates in their economic analysis and predicted the payback.

Whitaker then applied for financial assistance. Atlantic agreed to finance more than half of the upgrade cost. Whitaker simply repaid Atlantic with the savings from its electric bill, including signing over the rebate check it received from PSE&G.

Once Atlantic delivered the project materials, Mr. Whitaker contracted a different electrician he found listed on a church flyer to install them. The entire upgrade process, from survey to installation, took a little over a month. "Our lighting upgrade," Mr. Whitaker explains, "was a piece of cake: the financing was easily handled, and we got a local electrician to install everything. It was really no sweat."

Before the upgrade, Whitaker Newsletter's 24 fixtures were inefficient T-12 florescent lamps with magnetic ballasts. Such fixtures are common in small businesses. The electrician had

never before performed this type of lighting upgrade, but the straightforward directions make installation of 24 energy-efficient T-8 florescent lamps with electronic ballasts easy. Although the number of lamps per fixture was decreased, the employees thought the lighting was improved. And the improvement in lighting color gave the office a nice glow.

Whitaker also revamped one exit sign from incandescent to LED, an upgrade that increased the lamp life from 9 months to 50 years. This is especially important to Whitaker, since the local fire inspector had, in the past, warned the company about a burned-out exit lamp.

Mr. Whitaker was particularly impressed with the pollution prevention equivalency information supplied by EPA. His employees were impressed that he had done something good for the environment. Mr. Whitaker was so happy with the results of his lighting upgrade that he convinced a local municipality and a local school district to upgrade their facilities. He also helped PSE&G publicize energy efficiency programs by participating on the radio spots.

ENERGY STAR® helps businesses with energy efficiency information about lights and appliances, buildings and facilities, manufacturing, retail operations, and much more.

## Promote Use of Energy, Water and Waste Audits by Businesses

The building sector is the major consumer of energy in the U.S, using over one third of all energy and two thirds of electricity.<sup>3</sup> Yet it is cost effective to fix up almost any existing building to use dramatically less energy. New buildings can be 10 times more efficient than an ordinary building, existing ones three fold more efficient. Many businesses own their own building, but the majority rent space in someone else's building. Programs to reduce the carbon footprint of buildings need to address both owner-occupied spaces and rental space.

As described in the municipal building section of this chapter, many cities have made it mandatory to perform energy, waste and water audits on their municipal buildings. Because of these audits, cities have retrofitted numerous buildings, updating technology and capturing financial savings. Many communities support their businesses in conducting their own audits and making retrofits and updates to their buildings, but all should do this.

<sup>3</sup> U.S. Green Building Council, [www.USGBC.org](http://www.USGBC.org), 30 October 2006.

## CASE STUDY: Portland, OR

Portland’s Energy Trust Building tune-up and operations program<sup>4</sup> operates on the premise that buildings are like cars; they run most efficiently when they are properly cared for and periodically tuned up. The Energy Trust of Oregon, Inc.<sup>5</sup>, a public purpose organization helping Oregon citizens increase energy efficiency and renewable energy generation, enables

businesses to receive subsidized tune ups by qualified technicians to help save on energy costs and ultimately, carbon emissions.

The program is available to owners of large commercial buildings, and focuses on boiler and whole building tune-ups. On average, the program saves 10% of energy costs through tune-ups.

The Energy Trust expects to save about 300,000 therms and 6,700,000 kWh through this program annually, enough electricity and gas to heat about 1,000 homes in the Portland area for a year, and prevent the release of a significant amount of carbon. If a building qualifies, the city will provide the following assistance.

Phase	Incentive
Screening	Provided by Program, in collaboration with Service Provider when applicable
RCx Investigation	Custom incentive ranging from \$0.05 - \$0.10 per square foot, paid to Service Provider
Quick Fixes	Up to \$2,000, paid to Service Provider
Implementation	Up to \$0.03 per square foot, applies to measures with a simple payback of longer than one year, paid to Customer
Persistence	Up to \$4,500, paid to Customer

Portland also has significant programs to encourage the use of renewable resources by businesses. For instance, the biofuels program supports businesses that seek to create energy through the use of biofuels available in the state of Oregon. These fuels include, but are not limited to landfill gas, energy crops, and solid fuels based on residual material from forestry.

Energy Trust provides 100% of operating costs for the program to make it viable for a business. In addition, they will also provide assistance with initial feasibility studies.

Energy Trust also provides incentives of 35% of the system cost for businesses to install solar energy systems. During its first year, this program provided \$1.4 million in incentives for 126

different projects. Energy Trust also provides similar incentives for businesses to install solar water heaters.<sup>6</sup>

### CONTACT

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<sup>4</sup> Energy Trust Building Tune-up and Operations, [www.energytrust.org/bto/btu.html](http://www.energytrust.org/bto/btu.html), 27 September 2006.

<sup>5</sup> Energy Trust website, [www.energytrust.org/index.html](http://www.energytrust.org/index.html), 27 September 2006.

<sup>6</sup> Energy Trust, Wind Energy, [www.energytrust.org/RR/wind/index.html](http://www.energytrust.org/RR/wind/index.html), 27 September 2006.

## CASE STUDY: Anaheim, CA

Anaheim, California has developed a program to retrofit required exit signs in buildings with efficient light-emitting diode (LED) or photo luminescent (glow in the dark) technology. Estimated savings per exit sign is

at least 90%. Because these signs must be on 24 hours a day, 7 days a week, and are required of all public buildings, the reduction can represent a significant energy decrease over a year.<sup>7</sup>

The city subsidizes the cost of retrofit at 50% of the total cost, or \$30 per fixture, whichever is less, at a total cost of up to \$10,000.

Savings Achieved by Converting to LED Lighting Technology			
	5 Exit Signs	50 Exit Signs	100 Exit Signs
Energy Savings On Incandescent Lamps (based on 50 total watts)	\$210/year	\$2,095/year	\$4,190/year
One-time Incentive Amount	\$150	\$1,500	\$3,000
<b>Total Savings</b>	<b>\$360</b>	<b>\$3,595</b>	<b>\$7,190</b>

Assumptions:

1. 8,740 annual operating hours for old and new exit lighting system.
2. Two watts to operate LED lighting.
3. \$0.10 composite kWh cost used for purposes of this illustration; your average energy cost may vary.

### CONTACT

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## Provide Incentives to Encourage Energy Efficiency Standards

There are more than 76 million residential buildings and nearly five million commercial buildings in the U.S. today. By the year 2010, another 38 million buildings will be constructed. It is possible to make buildings that use little or no non-renewable energy, yet are far more comfortable and affordable.

Such buildings, called “green buildings” are healthier to live and work in, enhance the productivity of workers and enhance the security of the community.<sup>8</sup> Cities can encourage developers to build using energy efficiency standards, even if no regulations are in place.<sup>9</sup>

Many incentives to encourage developers to use best practices require little investment for the city. For example, cities can offer:

**Priority permit processing for builder/ developers who propose low-carbon projects**

**Reduced permit fees**

**Advertising and recognition for developers who use energy efficient, or renewable energy technologies.**

The following cases provide examples of effective incentives being utilized by municipalities to encourage businesses to increase the efficiency of their operations.

<sup>7</sup> Anaheim Public Utilities Exit Sign Programs, [www.anaheim.net/utilities/adv\\_svc\\_prog/led\\_exit\\_sign/index.pdf](http://www.anaheim.net/utilities/adv_svc_prog/led_exit_sign/index.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Anahaim\\_ExitSignProgram.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Anahaim_ExitSignProgram.pdf), 27 September 2006.

<sup>8</sup> U.S Green Building Council, [www.usgbc.org](http://www.usgbc.org), 3 October 2006.

<sup>9</sup> County of San Diego Building Department, [www.sdcounty.ca.gov/dplu/greenbuildings.html](http://www.sdcounty.ca.gov/dplu/greenbuildings.html), 3 October 2006.

## CASE STUDY: Flower Mound, TX

Flower Mound's Green Building Program offers free advertising and referrals if builders comply with the town's criteria for more energy efficient green buildings. By voluntarily complying with green building criteria set forth by the town, participating contractors can display a certification emblem in their advertising and get free publicity on the town's website.<sup>10</sup>

In order to qualify, participants must use a minimum of 30 best management practices from the town approved list for each project, as well as meet the following minimum practices:<sup>11</sup>

**Building projects must be at least 25% more efficient than the guidelines set forth by current International Energy Conservation Codes.**

**Builders must be LEED certified and demonstrate continuous compliance of those certification requirements.**

**Before construction begins, builders must submit a waste reuse, recycling and reduction plan to be agreed upon by the city.**

**Landscaping and paving requirements not directly pertaining to carbon reductions also apply.**

This program is an easy way to promote efficient building design with minimal use of public funds.

### CONTACT

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## CASE STUDY: Scottsdale, AZ

Scottsdale, Arizona has implemented a program to promote the building of more energy efficient and solar energy fueled buildings within the municipality through a series of economically enticing incentives.<sup>12</sup> First, if a builder submits a qualified proposal for a green building, the permit process is expedited through the city's fast track plan review process. In other words, green building projects will receive

permits in roughly half the time of regular projects, thus promoting green design from the beginning.

Builders incorporating solar energy into their projects are eligible for a 25% tax credit for the cost of the solar energy system. In addition, the city will provide signs to go up at the job site to let the surrounding community know of the project's environmental benefits.

Participating architects, designers and builders are also offered free promotional space on the city website and in green building information packets that are distributed at various events and through the mail.

### CONTACT

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<sup>10</sup> Flower Mound Green Building website, [www.flower-mound.com/env\\_res/env\\_res\\_green.php](http://www.flower-mound.com/env_res/env_res_green.php), 3 October 2006.

<sup>11</sup> Flower Mound Green Building Program brochure, [www.flower-mound.com/env\\_res/green\\_building\\_program.pdf](http://www.flower-mound.com/env_res/green_building_program.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/FlowerMound\\_grnbuilding.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/FlowerMound_grnbuilding.pdf), 3 October 2006.

<sup>12</sup> City of Scottsdale Green Building Program, [www.ci.scottsdale.az.us/greenbuilding/HowToJoin/Invitation.asp](http://www.ci.scottsdale.az.us/greenbuilding/HowToJoin/Invitation.asp), 3 October 2006.

## CASE STUDY: San Diego, CA

San Diego County<sup>13</sup> instituted a Green Building Incentive Program<sup>14</sup> to increase voluntary commitments to energy and resource efficient design. The program requires compliance with at least one of three resource conservation measures. The requirements assist builders and developers in reducing GHG emissions through increased recycled content or meeting energy efficiency measures.

To qualify for the incentives, the project must comply with one of the resource conservation measures listed:

1. Natural Resource Conservation
  - a. Recycled Content: A builder would be eligible for the incentive program by doing one of the following
    - Show that 20% or more of primary building materials being used contain, in aggregate, a minimum weighted average of 20% post-consumer recycled content materials (reused materials count as 100%).
    - Show that at least one primary building material (such as roofing) is 50% or more post-consumer recycled content.

- b. Straw Bale Construction: New buildings using baled straw from harvested grain for the construction of the exterior walls will qualify for the incentives
2. Water Conservation  
The installation of a graywater system in new or renovated buildings will qualify for the incentives. Graywater is the wastewater produced from bathtubs, showers, and clothes washers. In order to conserve water, it can be used for irrigation through subsurface distribution systems. A permit<sup>15</sup> is required from the Department of Environmental Health for the graywater system. Energy Conservation  
Energy use below California Energy Commission (CEC) Standards qualifies for the incentives. Residential projects that exceed the minimum Title 24 standards by 15% and commercial projects that exceed the standards by 25% qualify for the Green Building Incentive Program. The applicant must demonstrate to the Building Division that the project exceeds the Title 24 minimum standards by submitting compliance documentation done on a computer program approved by the CEC.

The program offers incentives of reduced review process turnaround time, saving approximately 7-10 days, a 7.5% reduction in plan check and building permit fees for projects meeting program requirements and no fees for the building permit and plan check of residential photovoltaic systems

### CONTACT

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<sup>13</sup> County of San Diego Building Program, [www.sdcounty.ca.gov/dplu/greenbuildings.html](http://www.sdcounty.ca.gov/dplu/greenbuildings.html), 3 October 2006.

<sup>14</sup> Brochure on San Diego Incentive Program, [www.sdcounty.ca.gov/dplu/docs/DPLU%20273.pdf](http://www.sdcounty.ca.gov/dplu/docs/DPLU%20273.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/SanDiego\\_BuildGreen.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/SanDiego_BuildGreen.pdf), 3 October 2006.

<sup>15</sup> CPC Title 24, Part 5, California Administrative Code, Appendix G.

## Energy Efficiency Standards in Commercial Building Codes<sup>16</sup>

Many cities have energy efficiency standards for their own buildings and have set a good example of how energy efficiency retrofits can pay back costs. Cities should extend these standards to commercial buildings.

The types of codes used to encourage energy efficiency standards can be categorized into two categories: Prescriptive and Performance Codes.

Performance codes set a mandatory target for the building to meet. These codes drive innovation for building developers, architects, contractors, etc. by allowing them to decide how to meet set targets. For example, builders must determine the best way to

meet Santa Monica's allowable energy budget for multi-family homes of 10%.

Prescriptive codes establish specific requirements for materials: for example, efficient boiler and furnace units with a minimum combustion efficiency of 80%.

The following case studies demonstrate how cities and states are setting energy efficiency standards using both prescriptive and performance codes.

### Energy Efficient Commercial Building Codes

## CASE STUDY: Santa Monica, CA

Santa Monica's green building requirements were designed to increase sustainability without putting excessive burdens on builders or developers. Many of the measures have some higher initial cost, though others can actually reduce first costs and operating costs. However, all of them increase the overall value of the building.<sup>17</sup>

The basis for the green building code is found in the following two performance based Ordinances and the Municipal Code<sup>18</sup>

1. [Green Building Ordinance](#)<sup>19</sup>  
This city Ordinance establishes prescriptive energy-saving measures for small residential projects, and energy performance targets beyond Title 24 for all commercial and larger residential projects.
2. [Construction and Demolition Waste Recycling Ordinance](#):<sup>20</sup>  
This Ordinance established requirements for reducing solid waste from construction related activities.

Santa Monica provides a design adviser to assist developers in understanding the process, what they must do to comply, what they should be doing to achieve a greater design and strategies to assist in the process.<sup>21</sup>

#### CONTACT

Green Building Program Advisor  
1212 5th Street, First Floor  
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<sup>16</sup> Sustainable Green Building Guidelines, [www.ciwm.ca.gov/GreenBuilding/Design/Guidelines.htm](http://www.ciwm.ca.gov/GreenBuilding/Design/Guidelines.htm), 3 October 2006. Includes performance or prescriptive instructions for designers and builders to use in construction projects. These instructions address materials use, design principles and construction techniques.

<sup>17</sup> The U.S. Green Building Council has found that there is no evidence that there has to be a premium for building green. In studies in which an initial premium of up to 2% was found, the green measures saved 20% of the construction costs over the lifetime of the building, [www.usgbc.com](http://www.usgbc.com), 3 October 2006.

<sup>18</sup> Santa Monica Green Building Program, [greenbuildings.santa-monica.org/requirements/projectrequirements.html](http://greenbuildings.santa-monica.org/requirements/projectrequirements.html), 27 September 2006.

<sup>19</sup> Santa Monica Green Building Ordinance, [greenbuildings.santa-monica.org/whatsnew/green-building-ordinance/green-building-Ord-1-5-2002.pdf](http://greenbuildings.santa-monica.org/whatsnew/green-building-ordinance/green-building-Ord-1-5-2002.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/SantaMonica\\_Ordinance.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/SantaMonica_Ordinance.pdf), 3 October 2006.

<sup>20</sup> Santa Monica Waste Recycling Ordinance, [greenbuildings.santa-monica.org/whatsnew/waste.ordinance.html](http://greenbuildings.santa-monica.org/whatsnew/waste.ordinance.html), 30 October 2006.

<sup>21</sup> Santa Monica Design Adviser, [greenbuildings.santa-monica.org/GBDA.htm](http://greenbuildings.santa-monica.org/GBDA.htm), 27 September 2006.

## CASE STUDY: State of California

California has developed a list of possible energy efficiency and sustainable building measures that builders should use to comply with state building codes.<sup>22</sup> These checklists (Tier 1 and Tier 2) are updated annually and attached to the Department of General Services' Standard Contract for Architectural and Engineering Services, Exhibit C.

The items on Tier 1 have been

evaluated as "cost effective" and all are recommended for inclusion in building designs. Tier 2 items may or may not be cost effective, but should be considered for inclusion in projects. Both checklists are submitted at the completion of the preliminary plan phase.

The checklists include a few performance standards, but are more prescriptive in nature.

These prescriptive codes provide direction for California builders about the minimum measures needed to meet energy efficiency codes.

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## Working with Power Plants and Other Significant Emitters

After reviewing the community's GHG baseline inventory, it is important to identify any businesses that emit higher levels of GHGs through their operations. If these businesses are present within the boundaries of a city, addressing these emissions is a critical means of managing emissions in the community.

In several states, power plants' emissions are already or will soon be regulated at the state level in the near future. Until recently, the state of Oregon and Massachusetts were the only states to have CO<sub>2</sub> standards for power plants.<sup>23</sup> However, several Northeast and Mid-

Atlantic states have initiated a Regional Greenhouse Gas Initiative to regulate the carbon dioxide emissions of power plants in the region. Under Assembly Bill 32, California will begin regulating emissions from businesses and power plants in California and even power plants outside the state that wish to sell into California. These regulations will soon influence power plants, but not other high emitters in the region.

Communities hoping to reduce emissions without or beyond regulations can create their own incentives or encourage high GHG emitters to commit to a variety of voluntary reduction programs and networks. For example, the EPA Climate Leaders program helps, "companies to develop long-term comprehensive climate change

strategies," such as developing GHG inventories and reduction plans.<sup>24</sup> Similarly, The Pew Center's Business Environmental Leadership Council (BELC)<sup>25</sup> is an association of corporations working together to address the challenges of climate change.

In addition to the resources listed below, such programs as the EPA Climate Leaders and the BELC websites, illustrate state and utility initiatives to work with large commercial emitters.

Recently, major banks have begun to put pressure on their major clients who have significant carbon footprints. JP Morgan Chase recently issued a statement to their clients that any who were significant emitters should put in place a plan to reduce emissions. This followed similar programs by Bank of America Corp and CitiBank.<sup>26</sup>

<sup>22</sup> Green Building Tiers [www.ciwmb.ca.gov/GreenBuilding/Design/Tiers.pdf](http://www.ciwmb.ca.gov/GreenBuilding/Design/Tiers.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/GrnBuildingTiers.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/GrnBuildingTiers.pdf), 27 September 2006.

<sup>23</sup> Oregon's Power plant Codes, [www.newrules.org/electricity/climateor.html](http://www.newrules.org/electricity/climateor.html), 27 September 2006.

<sup>24</sup> EPA Climate Leaders, [www.epa.gov/stateply/](http://www.epa.gov/stateply/), 5 October 2006.

<sup>25</sup> Business Environmental Leadership Council, [www.pewclimate.org/companies\\_leading\\_the\\_way\\_belc/company\\_profiles/](http://www.pewclimate.org/companies_leading_the_way_belc/company_profiles/), 5 October 2006.

<sup>26</sup> Bustillo, Miguel, "A Shift To Green" Los Angeles Times 12 June, 2005.



## CASE STUDY: State of Oregon

In 1997, the Oregon Legislature gave the Energy Facility Siting Council authority to set carbon dioxide emissions standards for new energy facilities.<sup>27</sup> Under

[Division 24](#)<sup>28</sup> of the Council's rules, beginning at OAR 345-024-0500, there are specific regulations, known as the Oregon Standard for CO<sub>2</sub>, for base load

gas plants, non-base load (peaking) power plants and non-generating energy facilities that emit carbon dioxide. These standards are as follows:

Base load gas plants	0.675 lb. CO <sub>2</sub> / kWh
Non-base load gas plants	0.675 lb. CO <sub>2</sub> / kWh
Non-generating facilities	0.504 lb. CO <sub>2</sub> / horsepower-hour

The standard for base load gas plants applies only to natural gas-fired plants. The standards for non-base load plants and non-generating facilities apply to all fuels. The Council has not yet set carbon dioxide emissions standards for base load power plants using other fossil fuels. Rules allow base load gas plants that have power augmentation equipment to meet both the base load and non-base load standards for the respective parts of the plant. The definitions for the facilities are in [Division 1](#).<sup>29</sup>

The calculations for compliance with the standard account for the

efficiency of the facility. Generating plants have the option of offsetting part or all of their excess carbon dioxide emissions through guaranteed cogeneration.

At their discretion, applicants can propose carbon dioxide offset projects they or a third party will manage, or they can provide funds via the "monetary path" to the [The Climate Trust](#).<sup>30</sup> The Council recognizes The Climate Trust as a "qualified organization," as defined in [statute](#)<sup>31</sup> (ORS 469.503). This

definition appears also in Council [rules](#)<sup>32</sup> (OAR 345-001-0010(45)). The Climate Trust takes responsibility for obtaining offsets when an applicant uses the "monetary path." Once a site certificate holder has provided adequate funds to The Climate Trust, it has met its obligations under the carbon dioxide standard.

### CONTACT

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<sup>27</sup> Oregon Energy Facility standard, [www.oregon.gov/ENERGY/SITING/standards.shtml#Carbon\\_Dioxide\\_Emissions](http://www.oregon.gov/ENERGY/SITING/standards.shtml#Carbon_Dioxide_Emissions), 27 September 2006.

<sup>28</sup> Oregon Energy Facility standard, [egov.oregon.gov/ENERGY/SITING/docs/rules/div24.pdf](http://egov.oregon.gov/ENERGY/SITING/docs/rules/div24.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon\\_Div24.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon_Div24.pdf), 3 October 2006.

<sup>29</sup> Oregon Energy Facility standard, [egov.oregon.gov/ENERGY/SITING/docs/rules/div1.pdf](http://egov.oregon.gov/ENERGY/SITING/docs/rules/div1.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon\\_Div1.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon_Div1.pdf), 3 October 2006.

<sup>30</sup> The Climate Trust, [www.climatetrust.org/](http://www.climatetrust.org/), 3 October 2006.

<sup>31</sup> Oregon Legislative, Energy; Conservation Programs; Energy Facilities, [landru.leg.state.or.us/ors/469.html](http://landru.leg.state.or.us/ors/469.html), 3 October 2006.

<sup>32</sup> Oregon Energy Facility standard, [egov.oregon.gov/ENERGY/SITING/docs/rules/div1.pdf](http://egov.oregon.gov/ENERGY/SITING/docs/rules/div1.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon\\_Div1.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Businesses/Oregon_Div1.pdf), 3 October 2006.

## CASE STUDY: Seattle, WA

While the Oregon Standard has helped the Northwest become more climate friendly at the regulatory level, Seattle, Washington's public utility, Seattle City Light demonstrates how a utility can engage in voluntary emissions reductions. The utility is on the leading edge of climate protection by managing its own emissions, as well as working with other businesses in the city to reduce emissions.

In 2005, Seattle City Light announced that it had reached its goal of becoming "carbon neutral", meaning having no "net emissions" of GHG. The utility has a natural advantage for reducing emissions; last year over 90% of its electricity came from hydroelectric dams. Another 4% of electricity originated from nuclear plants and the remaining electricity was generated from wind farms and natural gas- and coal-fired power plants.<sup>33</sup> Despite the high percentage of renewables in its portfolio, it is still responsible for

releasing about 200,000 metric tons of carbon dioxide each year. To claim no "net emissions" of GHG Seattle City Lights pays to offset (see Chapter 5 Infrastructure section) its emissions by investing in activities that reduce GHG elsewhere.

For example, the city has spent up to \$756,000 purchasing offset credits generated by activities such as converting city vehicles and buses to a mix of diesel and biodiesel and concrete plants to a cleaner manufacturing process.<sup>34</sup> While claiming these offsets, the city notes the importance of being proactive while also "transparent and accountable."<sup>35</sup>

Seattle City Light also operates the Climate Wise Program, which encourages local voluntary businesses and institutions to combat global warming. According to the website:  
... partners assess their business opportunities, invest

in new, more efficient equipment and practices, and share these achievements with peers and the public. As leading companies know, environmental performance provides a competitive edge<sup>36</sup>

Partners in the project agree to identify and implement practices that reduce GHG; complete, update, and strive to improve upon a Climate Wise Action Plan; and inform others about Climate Wise activities.<sup>37</sup> Members of the Climate Wise include several companies with typically higher emissions businesses, such as Ace Galvanizing, The Boeing Company and the cement producer LaFarge Corporation.

### CONTACT

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## Help Small Businesses Prosper and Protect the Climate

Controlling emissions of large corporations is essential in mitigating GHGs, but the role of smaller businesses is also important and is often neglected. As the story of Joel Wittaker at

the beginning of this chapter shows, with proper incentives small businesses can save money on energy costs and significantly contribute reducing greenhouse gases in a community.

<sup>33</sup> Stiffler, Lisa. "No global warming at City Light." Seattle Post-Intelligent Reporter. 10 November, 2005. [seattlepi.nwsource.com](http://seattlepi.nwsource.com), 5 October 2006.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> Seattle Climate Wise Partners, [www.seattle.gov/light/consERVE/business/climatewise/](http://www.seattle.gov/light/consERVE/business/climatewise/), 5 October 2006.

<sup>37</sup> Ibid.

## CASE STUDY: Seattle, WA

The objective of the city run “Smart Business Program” is to encourage businesses to convert old lighting fixtures to newer, highly energy efficient technology through city rebates on retrofit costs. Interior lighting can sometimes account for up to 60% of a small business’ energy bills. Replacing inefficient lighting with newer technology can thus deliver large energy savings. In addition, better lighting can promote increased worker productivity and a safer working environment.

Seattle offers the program to small businesses that are not part of an institution, chain or campus. One eligible business, a glass company, replaced their T-12

fluorescent lights with technologically superior T-8 fluorescent lights. The retrofit dramatically increased light levels, increased productivity and decreased the electricity bill, resulting in a happy businessowner and decreased reliance on grid energy. This particular client’s overall bill for the retrofit was \$6,291. With a smart business rebate of \$4,380, the overall cost to the client came to \$1,911. Given the estimated annual savings from the retrofit of \$1,170, this client’s retrofit is expected to pay for itself in just over a year and a half.<sup>38</sup>

In 2005, the Smart Business Program served 364 small businesses and achieved a

yearly energy savings of 4,113,135 kWh, or 11,300 kWh per business. The ratepayers of Seattle’s publicly owned power utility, Seattle City Light, fund the program. Seattle City Light seeking to diversify into other renewable energy sources in the coming years. In 2000 they sold 8% of their holdings in the Centralia coal fired plant in a step toward decreasing carbon emissions.<sup>39</sup>

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<sup>38</sup> Seattle City Light Smart Business Program, [www.seattle.gov/light/conserves/business/cv5\\_sbiz.htm](http://www.seattle.gov/light/conserves/business/cv5_sbiz.htm), 27 September 2006.

<sup>39</sup> Puget Sound Business Journal, June 2000, [www.bizjournals.com/seattle/stories/2000/06/05/story1.html](http://www.bizjournals.com/seattle/stories/2000/06/05/story1.html), 27 September 2006.

## Additional Resources

### California Sustainability Financial Incentives

[www.dsa.dgs.ca.gov/Sustainability/incentives.htm](http://www.dsa.dgs.ca.gov/Sustainability/incentives.htm)

**California Department of Energy** provides information on incentives in the areas of Energy, Water, Materials, Siting, Green Building, Landscaping and Transportation. This list will be updated quarterly and does not claim to contain all existing funding options. If you know of a financial assistance program that is not on this list or should no longer be on this list then please contact:

[Panama.Bartholomy@dgs.ca.gov](mailto:Panama.Bartholomy@dgs.ca.gov) or [Shweta.Bhatt@dgs.ca.gov](mailto:Shweta.Bhatt@dgs.ca.gov)

- Incentives relating to [Energy](#)<sup>40</sup>, including conservation, efficiency, renewables, self-generation and commissioning.
- Incentives related to [Water](#),<sup>41</sup> including conservation, efficiency and re-use.
- Incentives related to [Material selection and Waste management](#),<sup>42</sup> including recycled content, re-use and waste reduction.
- Incentives related to [Siting](#),<sup>43</sup> including brownfield redevelopment and "Smart Growth" strategic planning.

- Incentives related to [Green Building](#),<sup>44</sup> including grants for projects and programs, plan review expediency and Leadership in Energy and Environmental Design (LEED) submission cost coverage.
- Incentives related to [Landscaping](#),<sup>45</sup> including education, tree-planting, mitigation and restoration.
- Incentives relating to [Transportation](#),<sup>46</sup> including: bicycle and pedestrian safety and facilities construction and alternatively fueled vehicles.
- Incentives relating to [Miscellaneous](#),<sup>47</sup> including: financing programs granted by private institutions.

**Center for Small Business and the Environment** offers an array of information for small businesses interested in climate protection. Contact: Byron Kennard, Executive Director  
The Center for Small Business and the Environment  
P.O. Box 53127  
Washington DC, 20009  
202 – 332-6875  
[www.aboutcsbe.org](http://www.aboutcsbe.org)



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<sup>40</sup> [www.dsa.dgs.ca.gov/Sustainability/energy.htm](http://www.dsa.dgs.ca.gov/Sustainability/energy.htm), 3 October 2006.

<sup>41</sup> [www.dsa.dgs.ca.gov/Sustainability/water.htm](http://www.dsa.dgs.ca.gov/Sustainability/water.htm), 3 October 2006.

<sup>42</sup> [www.dsa.dgs.ca.gov/Sustainability/wastemgmt.htm](http://www.dsa.dgs.ca.gov/Sustainability/wastemgmt.htm), 3 October 2006.

<sup>43</sup> [www.dsa.dgs.ca.gov/Sustainability/siting.htm](http://www.dsa.dgs.ca.gov/Sustainability/siting.htm), 3 October 2006.

<sup>44</sup> [www.dsa.dgs.ca.gov/Sustainability/greenbldg.htm](http://www.dsa.dgs.ca.gov/Sustainability/greenbldg.htm), 3 October 2006.

<sup>45</sup> [www.dsa.dgs.ca.gov/Sustainability/landscaping.htm](http://www.dsa.dgs.ca.gov/Sustainability/landscaping.htm), 3 October 2006.

<sup>46</sup> [www.dsa.dgs.ca.gov/Sustainability/transportation.htm](http://www.dsa.dgs.ca.gov/Sustainability/transportation.htm), 3 October 2006.

<sup>47</sup> [www.dsa.dgs.ca.gov/Sustainability/Miscellaneous.htm](http://www.dsa.dgs.ca.gov/Sustainability/Miscellaneous.htm), 3 October 2006.