



The Closed-Loop Scoop

Washington State Department of Ecology, Solid Waste & Financial Assistance Program

May 2007

Publication No.
07-07-002

A Climate-Friendly Energy Future for China

European Renewable Energy Council & Greenpeace present a Masterplan

China can achieve rapid economic growth without putting the climate at risk through the use of renewable energy, combined with energy efficiency, according to "Energy Revolution: A Sustainable China Energy Outlook." This report is part of a global study produced by Greenpeace and the European Renewable Energy Council.

"The average Chinese person currently consumes one-third of the energy that an average European consumes and one seventh of an American, but that number is set to increase. Our . . . report shows that China can maintain economic growth and—at the same time—stabilize its CO₂ emissions at current level by 2050," said Sven Teske, energy expert of Greenpeace International.

The report takes the development needs of China into account and highlights a practical plan for a Chinese energy strategy, as part of the world's efforts to prevent dangerous climate change. The good news is that the current Chinese governmental targets are almost in line with the report's scenario. The Chinese government has a target of decreasing its energy consumption per unit of gross domestic product by 20 percent by 2010, while the report asks for 23.7 percent.

On renewable energy, the report shows that China can afford to be more ambitious in the development of wind energy and solar power. The Chinese government's goal is that by 2020, the country will supply 16 percent of its primary energy from renewable energy sources. To reach that goal, together with other measures, China plans to develop 300 gigawatts (GW) of hydropower, 30GW of wind power, and 1.8GW of solar power. According to the energy report's scenario, China has the potential as well as the capacity to develop 118GW of wind power and 25GW of solar power by 2020.



Coal yard near Shanghai

"Greenpeace calls for the Government to implement its target to limit the growth of energy consumption as China continues to develop, and also to introduce strong policies . . . to support the development of wind and solar [power] industries in China," said Yang Ailun, Greenpeace China Climate and Energy Campaign Manager.

However, the report also highlights the short time window for making the key decisions of reforming the Chinese energy structure, which still depends 70 percent on coal. Just in the past two years, the capacity of coal-fired power grew by 160GW, all of which will keep polluting for decades to come. "China has to get rid of its dependency on coal. Fortunately, there is no reason to believe that such a trend will continue from next year onwards," Yang continued. "With the enforcement of energy efficiency targets and also the decision to close down 50GW of its least efficient coal-fired plants, the trend of massive coal-fired plants' installment will be slowed down from 2008."

Energy [R]evolution: A Sustainable China Energy Outlook is available online from Greenpeace China at <http://www.greenpeace.org/china/en/press/reports/energy-revolution>.

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Elementary School Food Waste Composting

by Michelle Andrews, Education and Outreach Specialist, Thurston County Solid Waste

This fall, three Thurston County elementary schools will turn their food waste into compost for their gardens. By composting food waste, these schools anticipate they will reduce their garbage weight by approximately 50 percent!

The schools will accomplish this through "Food to Flowers," an on-site, school-based composting program that recycles food scraps and soiled papers and turns them into valuable compost. This program is modeled after similar school programs in Bellingham, King County, Clark County, Eugene, and San Francisco. The Thurston County program has the ability to save the school district on trash disposal bills, educate students about composting, produce compost for gardens (or for fund raising), and raise community awareness about composting as a form of waste reduction.

Thurston County Solid Waste received grant funding through the Department of Ecology to offer this program to the elementary schools. In order to determine which elementary schools would be best for the project, the solid waste office sent surveys to 41 elementary schools within Thurston County last January. The surveys gauged interest level, staff and volunteer support, current recycling practice, and enthusiasm regarding on-site food waste composting. Out of the 28 surveys returned, 6 schools were interviewed, of which 3 schools were identified for the on-site program: Boston



Harbor, Garfield, and Roosevelt Elementary Schools.

Two bins are currently under review for these schools: The Earth Tub by Green Mountain Technologies (www.gmt-organic.com/EarthTub/et-info.php) and The BioSafe by BioSystem Solutions (www.biosystemsolutions.com/solutions/biosafe.html). The bins selected will be placed this summer, which will provide enough time for the school kick-off assemblies in September or October presentation this fall.

WSU Thurston County Extension, a partner on this project, will coordinate Master Gardener/Composter volunteers to either improve or create gardens at these schools. The compost from the bins will be recycled into these garden beds, which could potentially grow food for the schools, closing the food waste loop! For more information regarding this project, please contact Michelle Andrews at andrewm@co.thurston.wa.us.

Calendar of Events

May 16-18, 2007, 33rd Annual Zero Waste Conference. Whistler, B.C. For details, visit the Web site at http://www.rcbc.bc.ca/events/annual_conference.htm.

May 22, 2007, Filling the Void: How States Are Stepping Up and Acting on Global Warming, Multnomah Athletic Club, 1849 SW Salmon St., Portland, 9:30am-11:30am. For more information, call 503-222-1963 ext. 117 or visit the Web site at <http://www.oeconline.org/events/bizforum5-22-07>.

May 31-June 2, 2007, 5th Business Alliance for Local Living Economies Conference, Berkeley, Calif. For details, visit the Web site at <http://www.livingeconomies.org/events/conference07>.

May 30-31, 2007, 3rd National Product Stewardship Forum, San Francisco. To learn more, visit <http://www.productstewardship.us/displaycommon.cfm?an=1&subarticlenbr=221>.

May 30-31, 2007, Building Brand & Business Value Through Retail Sustainability, Univ. of Wash., Seattle. To learn more, visit the conference Web site at <http://depts.washington.edu/execed/retailsustainability/>.

June 4-7, 2007, Northwest Hazardous Waste Conference for Household and Small Business Programs, Troutdale, Ore. Check Web site for upcoming information: <http://www.nahmma.org/cde.cfm?event=167208>.

July 27-29, 2007, SolWest Fair. This annual renewable energy event will take place at the Grant County (Oregon) Fairgrounds in John Day, Oregon. For details, visit the Web site at <http://www.solwest.org/fair.htm>.

Island Beaches Come Clean

by Cheryl May, Island County

In June of 1998, a grant from the Washington State Department of Ecology allowed Island County to develop a program for removing plastic litter from the county's beaches. Using volunteers as labor, that program has been in place ever since and has had many additions and improvements.

Early on we noticed that not only did volunteers come to us in droves, but they were demanding an education about plastic litter and the harm it causes in our particular beach environment. We then developed a program that could be taught to young and old alike, providing pertinent information about beach litter. We advertised our program through every free source we could find, including informational packets to all schools, churches, and businesses, and, of course, the Navy.

We began to present this program, first in the schools, then at County fairs and community functions. We started to get noticed. The schools in the area started to call on us to be components of their environmental studies programs as we were educational in nature and hands on in practice. We presented an abbreviated program at the beginning of each litter pickup function, especially the two advertised Saturday beach cleanups. The program began to be used as a juvenile detention diversion, as well as the community service project demanded by the high schools' graduating seniors.

Local newspapers and radio stations continually gave us positive press. That positive community impression allowed us to develop an adjunct program, adoption of beaches by organizations and individuals.

We began by advertising 12 beaches that we thought would, either by size or by having a continual amount of litter, need a group to clean them. We started getting calls, at the beginning from the Navy squadrons, and then later from other organizations. Also, two families asked for beaches to adopt. We asked that all these volunteers commit to two years in the program, clean the beach four times a year (preferably quarterly), become environmentally aware, obey safety rules, and provide us a list of who actually cleaned the beach. (It has always been hard for us to get volunteers to sign their name to anything, but we continually try!) Volunteers recycle whatever they can from their loads and fill out a data card for 10 percent of their load (which teaches extrapolation skills). We send the data card to the Ocean Conservancy as a part of a worldwide database, listing what items the volunteers picked up.

We provided the bags to contain the litter, an educational program, gloves for safety, a small first aid kit, and "picker-uppers" for those that have difficulty bending down and climbing over log lines. Also, we allowed these groups to use our account number at the transfer stations to pay the tipping fees. (In the nine years we have had an account at the transfer station, not one single person has ever misused the privilege!)

Recently, we added a fourfold display board that can serve as part of the presentation; this board is available to individuals and groups. As well, we developed a game, which others can borrow, that uses a beach litter decomposition poster and actual beach litter to teach how long it takes any given item to decompose on the beach. People are astounded at how long something can last in an active beach environment. We also take a large pickup truck filled with beach litter to different community events to graphically show how much litter is out there and how relatively short a time is spent getting it off the beach. We can usually fill a pickup truck with beach litter in three hours with three volunteers. Amazing, huh? It's even more remarkable when you consider that most of our litter is small and very light in weight.

Amazing statistics:

Whidbey Island volunteer litter crews spent 7,877 hours cleaning 1,554 miles of Whidbey and Camano Island beaches; they removed 87,709 pounds of plastic litter in 2 years and recycled 1066 pounds.



Dinosaur invites Italians to recycle glass.

Composting at Correctional Facilities

by Janine Bogar, Sustainability Specialist, Dept. of Corrections

Five of the 15 Washington State Department of Correction (DOC) prison facilities are composting food waste, each using a method that works for them.

Cedar Creek Corrections Center in Thurston County, with an offender population of approximately 400, composts food waste using low-tech, low-cost and highly inventive methods. Each month, the center composts a ton of food waste using worm bins. Shredded paper and wood chips provide the bedding and bulk. Using available materials, offenders made the compost bins and rotating compost screen. Originally, the worms were housed on the floor, in a long windrow supported with sandbags made from old pants legs. They now live in custom designed vertical compost systems to maximize space. To prevent troubles with vermin, and to keep the worms happy, they do not compost meat, dairy, or citrus waste, and this limits the amount they are able to compost. Composting has reduced the facility's garbage by one-fourth so far, with more reductions planned. Cedar Creek uses the compost on its many gardens or bags it as "Con-post" and distributes it free to the local community.



In-vessel composter at Larch Corrections Center

In Clark County, Larch Corrections Center, which also has 400 offenders, has taken a different approach. This facility purchased a Wright Environmental in-vessel compost system. Unlike the vermicompost system at Cedar Creek, this totally contained system takes all food waste, allowing for significantly more waste diversion, though the facilities are the same size. Food waste and bulking agent (chipped wood from local state lands) are mechanically dumped in the top of the machine. Just fourteen days later, compost comes out the other end. The machine does all the turning and aerating. Leachate (if there is any) is collected, contained, and reinjected into the mix. The compost is cured for a few more weeks after it leaves the composting vessel, and then is screened and used on the grounds. Larch has seen its gardens grow, and its garbage bill shrink by seventy percent since starting the composting effort. In Fiscal Year 2006, Larch composted 40 tons of food waste.

More than 2,000 offenders live at the Washington State Penitentiary, and that adds up to a whole lot of food waste—two tons a day! In 2003, DOC Correctional Industries, the City of Walla Walla, and Walla Walla County teamed up to create a regional composting facility, with grant funding from the Department of Ecology. The regional facility composts food waste from the penitentiary along with yard waste from the community. Most of the food waste is composted in one of four Engineered Compost System in-vessel bins on site, using



Cedar Creek Con-Post label

(Composting at Corrections, continued.)

chipped yard waste for bulking agent. Additional yard waste and food waste is also composted in aerated static piles. In Fiscal Year 2006, the Penitentiary composted 800 tons of food waste. The facility provides jobs for offenders and a salable end-product.



Food waste at Washington State Penitentiary

Olympic Corrections Center, near Forks, has a covered aerated static pile compost system, where the center composts both food waste and biosolids. With just 360 offenders, the center has plenty of capacity, so it also takes food waste from the 900 offenders housed at the nearby Clallam Bay Corrections Center. No special trips are needed for transport; the food waste is placed in 90-gallon totes and hauled on a trailer behind the van that transports daily inmate work crews between the two facilities. Food is stored in the totes until it is ready to be mixed with available biosolids and bulking agent. Shredded paper and wood chips serve as bulking agents. The mixed material is then spread on top of one of 13 negative-air ports and nature takes over. The air that is pulled through the compost piles is sent through a wood-chip biofilter. Combined, Olympic and Clallam Bay Corrections Centers compost 300 tons of food waste and biosolids each year.



Trailer used to haul food waste from Clallam Bay to Olympic Corrections Center

Stafford Creek Corrections Center was just given the long-term loan of a commercial-sized worm bin from the Department of Ecology. While not large enough to compost all the food from the 2,000-bed facility, the center plans to start composting limited food waste, with the hopes that success will encourage increased composting capacity.

Finally, not all the composting is happening at the correctional centers. In February, DOC headquarters started collecting food waste in the four lunchrooms. This material is hauled, via work crews, to Cedar Creek Corrections Center for composting.

Composting is one of the key factors in DOC's successful waste reduction—15 percent from fiscal year 2004 to 2006. DOC continues to work on finding more composting opportunities.



Aerated static pile compost facility at Olympic

First Day of Spring Kick Off!

Ecology's Eastern Regional Office kicked off the first official day of spring this year with a Xeriscaping project managed by the ERO Sustainability Committee and funded by the Solid Waste and Financial Assistance Program. Native plants such as common yarrow, Big Basin sage, creeping Oregon grape, and serviceberry were planted along the west side of the office building. These plants are drought resistant and have been planted in an extremely hot and sunny location. "The committee hopes to use this project to educate staff and visitors about the benefits of planting native plants, which are naturally pest resistant and require no irrigation once established" said Marni Solheim, the project leader from the Sustainability Committee.

Volunteers: Marni Solheim, Jason Cocke, Zach Hedgpeth, Stacia Douglas, Kim Alexander, Kevin Brown, Donovan Gray, Scott Tarbutton, and Brandi Ward. Pictures below by Stacia Douglas.



Governor's Award for Pollution Prevention and Sustainable Practices

Do you know of a facility or group that is going the extra mile to be good environmental stewards?

Do you want to see them recognized for their efforts?

Point them toward the Governor's Award!

Ecology is accepting applications for the 2007 Governor's Award for Pollution Prevention and Sustainable Practices. Any Washington business, school, organization or public agency in good standing with environmental regulations is eligible for this award. The award recognizes those who have reduced or eliminated their use of toxic materials, their waste, and their emissions, those who have switched to practices that conserve resources and energy, and those who are leading the way toward sustainability.

Applications are due June 1, 2007. (Postmarks are okay.) The application form, guidelines, and information about past winners can be found at the newly redesigned Web site:
<http://www.ecy.wa.gov/programs/hwtr/GovAward/index.html>.

Annual Solid Waste Status Report

The *Solid Waste in Washington State - Fifteenth Annual Status Report* is now available at <http://www.ecy.wa.gov/biblio/0607024.html>. If you would like a hard copy please contact Millie White at MIWH461@ecy.wa.gov (360-407-6900).

Status of Three Washington State Rule Revisions

May 2007 update

Remedial Action Grants and Loans Rule Adopted

Ecology adopted amendments to chapter 173-322 WAC, Remedial Action Grants and Loans, on March 22, 2007. The amendments enable Ecology to carry out a new Extraordinary Financial Hardship loan program. This amendment became **effective on April 23, 2007**.

Loans under the Extraordinary Financial Hardship loan program will have deferred terms and conditions that may not be indefinite. The rule requires an applicant to demonstrate the following:

- ◆ Financial need for the loan.
- ◆ Inability to repay the loan under present circumstances.
- ◆ Inability to obtain funds from any other source.
- ◆ Inability to bond or raise its tax base.

Local governments cannot receive Extraordinary Financial Hardship loans unless the Department of Ecology's Director approves their applications. The requirements for hardship loans differ from the regular loans in two ways. The first is the applicant's complete inability to repay the loan under present circumstances (from any source of funding, whether insurance, bonds, taxes, etc.). The other is that deferred terms and conditions need the Director's approval.

For more information on the rule or the new loan program contact Diane Singer at dire461@ecy.wa.gov or 360-407-6062.

New Law on Flame Retardants

This spring, the Washington State Legislature passed ESHB 1024, phasing out the use of polybrominated diphenyl ethers (PBDEs). These chemical compounds have been widely used during the last 30 years as flame retardants in a variety of products. Unfortunately, these toxic flame retardants are showing up in the tissues of living creatures, including humans, all around the world. On April 17, Governor Gregoire signed the bill into law.

To learn more or read the law, visit <http://apps.leg.wa.gov/billinfo/summary.aspx?bill=1024&year=2007>.

Rules Under Development

Ecology's Solid Waste and Financial Assistance Program is currently working through the rule-making process for two rules. These rules are all at various stages of the process (Chapter 34.05 RCW). The links below will take you to the program's rule development pages where you can find more information about whichever rule you are interested in.

• Biosolids Management Chapter 173-308, WAC

<http://www.ecy.wa.gov/programs/swfa/biosolids/ruleDev.html>. This rule amendment will streamline the biosolids permitting process, better address septage management requirements, create a more thorough and equitable fee structure, and address "general housekeeping" issues. *The formal public comment period closed March 8 and Ecology is now reviewing the comments we received and may make changes to the rule language base on these comments. The agency's response to comments will be published in the Concise Explanatory Statement. This will be available on the Web site and will be emailed to commenters after the rule is adopted. Ecology anticipates filing the CR 103 and adopting the rule in May.*

• Electronic Products Recycling Chapter 173-900, WAC

<http://www.ecy.wa.gov/programs/swfa/eproductrecycle/rulDev.html>. This new rule implements Chapter 70.75N RCW – Electronic Products Recycling, the law that created a recycling program for unwanted electronic products. Products include used and unwanted computers, monitors, and televisions. *Ecology has filed the CR 101 Pre-proposal statement of inquiry with the Office of the Code Reviser and is seeking informal comments on the second draft rule until May 18. Ecology intends on filing the CR 102 Proposed Rule Making in July where Ecology will begin the formal public comment period. The rule will be adopted in September, 2007 and will be effective in October 2007.*

Department of Ecology

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We eagerly await your news.

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