

The State of Energy

UPDATES FROM THE STATE OF CT OFFICE OF POLICY AND MANAGEMENT (OPM) • ENERGY MANAGEMENT UNIT

Mar/Apr
2008

First Ever Forward Capacity Auction Completed

On February 4-6, ISO-New England conducted the region's first ever Forward Capacity Market auction to secure electric resource commitments for 2010 – 2011 timeframe. The auction was declared a success by ISO, the region's grid operator and wholesale market administrator, in that the auction attracted new investment, increased the role of demand resources, which competed alongside traditional generating resources, and reduced the need for Reliability Agreements in the region.

"The results of the auction demonstrate that the Forward Capacity Market (FCM) worked as designed in attracting significant investment in new resources while maintaining needed existing resources in New England," said ISO-New England President and CEO Gordon van Welie. "ISO is pleased with the participation and smooth execution of this first auction. The auction mechanism gives us the market stability needed to encourage the long-term development of the region's bulk electric power system in the most efficient manner possible."

Cont'd page 2

Green Building Regulation in Process

Have you ever walked into a building and wondered "how can people work here?" The forthcoming "green building" regulation should make that a thing of the past, at least in new and renovated schools and state buildings.

Soon, buildings that cost \$5 million or more that utilize \$2 million or more of state funds, and renovations of \$2 million or more that utilize \$2 million or more of state funds will have to meet

standards that will require a significant performance improvement over typical new or renovated buildings. This will mean improved indoor air quality, lower operating costs from energy savings, reduced greenhouse gas emissions, and overall better building performance. These benefits will result in a better work and learning environment. Studies have shown that high performance buildings result in lower absenteeism (employee and student) and better (student) test scores.

The regulation is based on the Leadership in Energy and Environmental Design (LEED) point system that was developed by the U. S. Green

Cont'd page 5

Household Fluorescent Bulbs: Disposal and Clean-Up

Compact fluorescent bulbs are a smart choice to save significant amounts of energy and money. Using less energy means lower greenhouse gas emissions and reductions in nitrous oxide, a component of smog. According to the US Department of Energy, if we all switched our five most-highly used light bulbs to compact fluorescents, we would save enough electricity to shut down 21 power plants—about 800 billion kilowatt-hours.

However, fluorescents themselves do contain small amounts of mercury. Typically, a compact fluorescent contains 3-5 milligrams of mercury, and some newer ones may contain only 1-2 milligrams. (This compares to approximately 400+ milligrams in the old style mercury

thermometers.) Despite the small amount of mercury, these bulbs should be handled and disposed of properly. Residential users of the bulbs are strongly encouraged to bring burnt out fluorescents to hazardous waste collection sites. There are also some retailers, such as IKEA, that will take back used bulbs to recycle. Visit the Connecticut Department of Environmental Protection's website,

<http://www.ct.gov/dep/cwp/view.asp?a=2708&q=3788> 46 for more information on in state disposal sites.

While intact fluorescent bulbs are perfectly safe, these bulbs should be handled carefully because of the small amount of mercury contained within them. A recent study conducted by the Maine Department of Environmental Protection analyzed the levels of



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DPUC Active Dockets Update

The following energy-related dockets of interest are active at the Department of Public Utility Control:

CT Natural Gas (CNG) Billing Issues – in this docket (08-02-02), DPUC is investigating CNG for billing practices, in which it is alleged that CNG deliberately read customer meters inaccurately for several months, causing subsequent high bills for customers. Customers received unsatisfactory answers to complaints about billing problems. A final decision in this matter is expected by June.

CT Energy Efficiency Partner Program – The CT Energy Efficiency Partner Program is a new initiative that will offer funding for the purchase and deployment of enhanced demand-side management technologies to help consumers conserve electricity and reduce demand in Connecticut – especially during peak times, usually occurring in the summertime, when power is most expensive and air quality is at its worst. Section 94 of PA 07-242 *AAC Electricity and Energy Efficiency* requires the DPUC to establish guidelines for the administration of the Program and authorizes the DPUC to spend up to \$60 million annually to fund projects that will reduce Connecticut's peak electric demand. Docket 07-06-59 seeks input from the energy community and public at large in designing the Program. Written comments were due March 7 and a public hearing is anticipated before April 1.

Review of CL&P and UI-Administered Electric Conservation and Load Management Plans – this docket (07-10-03) will review and amend or approve the Energy Conservation Management Board's 2008 Plan for conservation, efficiency and load management programs and budgets. These programs are funded by charges on customer electric bills (see page 5). The DPUC is expected to make a final decision in the matter by the end of May.

"Peaking" Electric Generating Plants – Section 50 of Public Act 07-242 required the construction of certain electric "peaking" generating plants, which generally run on diesel fuel or natural gas are uniquely equipped to start up quickly and provide energy on short notice, usually on hot summer days when air conditioning use spikes. Pursuant to the Act, CL&P and UI are *required* to provide peaking generation, while other entities could also provide such service. On March 5th, the DPUC announced it had received eleven proposals totaling 1,800 MW of peaking capacity on new and existing facility sites. The Department may accept or reject any or all of the proposals, its mandate being to choose the project(s) that are in the ratepayers' interest. The Department is expected to render a decision in this docket (08-01-01) by July 1, 2008.

Advanced Metering - Section 98 of Public Act 07-242 requires CL&P and UI to submit a Plan to the DPUC to deploy an advanced metering system that is capable of tracking hourly consumption to support innovative electric rates such as time-of-use or real-time pricing. The Plan must outline a schedule whereby advanced meters and the network to support the meters are deployed on or before January 1, 2009. Section 98 also requires CL&P, UI and all competitive electric suppliers and aggregators to offer advanced pricing options, including, but not limited to time-of-use and real-time rates. The DPUC has issued a final ruling regarding the Plan that was submitted by CL&P (docket 05-10-03RE01) and is currently reviewing the Plan that was submitted by UI (docket 07-07-02). A decision in the latter docket is anticipated by mid-March.

Forward Capacity Auction (cont'd)

In New England, the existing electricity markets have historically provided inadequate incentives to bring new resources online. The FCM was established in response to a Federal Energy Regulatory Commission (FERC) ruling back in 2003, which found that the then-existing capacity market in New England did not allow suppliers, especially those in congested areas of the system, to adequately recover their costs. That ruling prompted what turned out to be a several year long process to design a capacity market that would allow developers to recoup their costs and replace Reliability Agreements with a market-type mechanism.

The FCM was developed by ISO New England, the six New England states, and industry stakeholders. Under FCM, ISO-New England projects the needs of the power system three years in advance and then holds an annual auction to purchase the power system resources that will satisfy the future regional requirements.

The auction began with a starting price of \$15.00/kW-month. The price was lowered with each round and, accordingly, new and existing demand- and supply-side resources began dropping out of the auction at certain price points. In the eighth round, the auction reached the floor price of \$4.50/kW-month with excess supply. In the end, the auction will purchase 34,077 MW of capacity at price of \$4.254/kW-month. 30,865 MW of generating capacity cleared in the auction, including 626 MW from new generating capacity resources, of which more than 350 MW are in Connecticut.

As a result of a previously incomplete market structure, the region was forced to pay generating facilities not to retire in order to protect system reliability and ensure resource adequacy. These out of market payments are referred to as Reliability Agreements. Today, almost \$400 million annually in out of market compensation is paid to more than 18 generating units providing about 3,200 MW of generating capacity needed for system reliability. However, as a result of the first auction process, the number of generating units needed for system reliability has been reduced to two – Norwalk Harbor Units 1 and 2 in Connecticut, which total approximately 330 MW of generating capacity. This is good news for Connecticut, which has been burdened with the most Reliability Agreements in the region and the highest out of market costs. However, it is still unclear how and how much these units will be paid for their capacity. ISO-New England is currently working with the region's stakeholders to address compensation issues for these and other resources deemed needed for system reliability in the future.

Another feature of the Forward Capacity Market is the ability for demand side resources to compete on a level playing field with traditional generating resources. This feature was something Connecticut specifically fought for in the market design discussions. Demand resources represented a significant portion of the resources that cleared in the auction, totaling 2,554 MW. Of that amount, 1,188 MW are new demand side resources and the remainder are existing resources. In Connecticut, 238 MW of new demand side resources and 610 MW of existing demand side resources cleared the auction.

The next FCM auction is scheduled for December of this year to secure resources for the 2011-2012 timeframe. So far, there is active interest in the market and more than 15,000 MW of resources have expressed interest in the December auction. "Clearly the considerable interest in subsequent auctions demonstrates the momentum behind this market and its potential to fulfill New England's long-term electricity needs," said van Welie.

For more detailed information on the first FCM auction, see ISO-New England's filing with the FERC at <http://www.iso-ne.com/regulatory/ferc/filings/2008/mar/index.html>.

crude oil

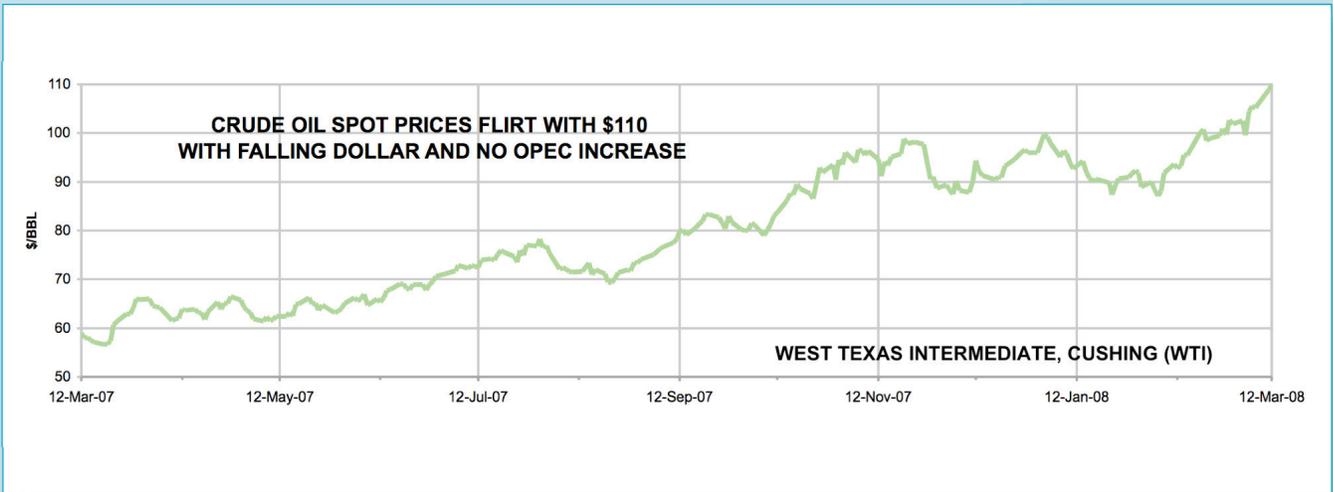


Crude Oil

The falling U.S. dollar and OPEC's decision not to increase production more than offset the unexpectedly large 6.2 million barrel increase in U.S. inventories this past week, pushing crude oil prices to new record highs. Spot prices reached \$109.93 per barrel on March 12th, 87% higher than a year ago. Nine of the past ten 12 month strips (the average of the next 12 monthly futures prices) have exceeded \$100 and a record high of \$105.00 was set on March 12th. This was 65% higher than a year ago.

did you know?

A 42 gallon barrel of crude oil makes about 19.5 gallons of gasoline.



natural gas



Natural Gas

Natural gas prices have gone up rapidly during the past 7 weeks. Colder weather has caused a large drawdown in inventories which are now 9.7% less than last year and only 4.3% above the 5 year average. Until December, storage levels had been at record high levels and had helped to limit price increases. The declining dollar has caused speculative funds to seek out commodities, such as crude oil and natural gas, pushing up their prices. Futures prices are now 32% higher than last year and spot prices are up 42%.

did you know?

There are 20 compressed natural gas filling stations available to the public in New England, four of which are in Connecticut.



heating oil



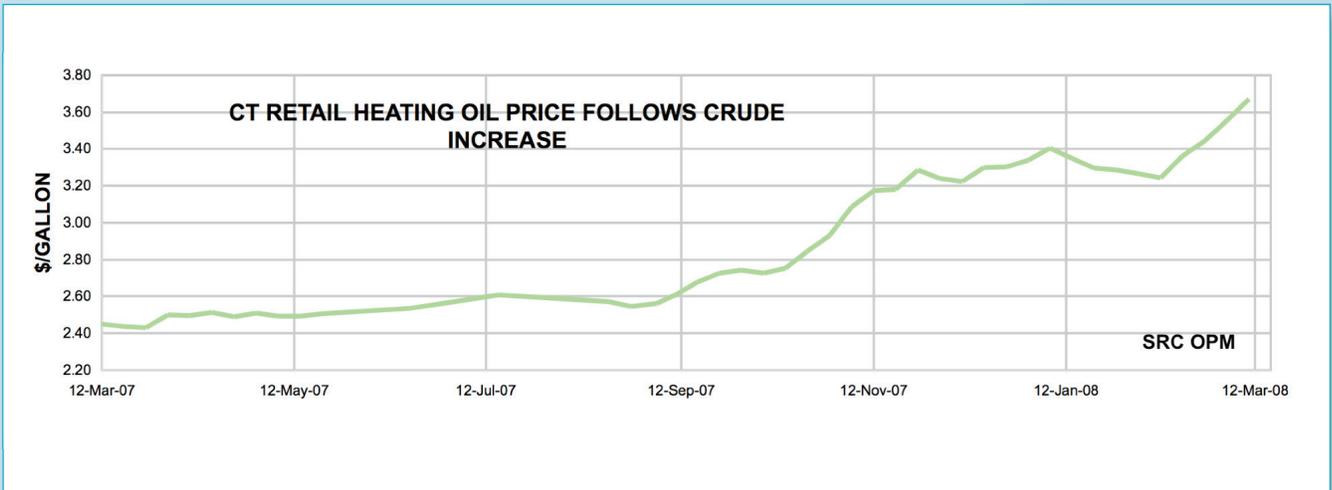
Heating Oil

State retail heating oil prices have been rising since the beginning of September. In one stretch, from September to November, Office of Policy and Management (OPM) price surveys showed 11 of 13 weeks setting new record highs. Soaring crude oil prices, cold weather, and low inventories have been the main factors causing the high prices. The past three weeks have each set additional record highs. The latest survey, March 10th, showed an average statewide price of \$3.672 per gallon. This is \$1.222 (50%) higher than a year ago.

For more information you can click on the following link:
http://www.ct.gov/opm/cwp/view.asp?a=2994&Q=386258&opmNav_GID=1808&opmNav=

did you know?

The Northeast Home Heating Oil Reserve holds approximately 2 million barrels of home heating oil, enough to sustain the region for about 10 days.



gasoline



Gasoline

After hitting a record high of \$3.295 on June 1, 2007, Connecticut retail gasoline prices had declined to \$2.856 by mid October. Despite lower winter demand and the highest inventory levels since 1993, soaring crude oil prices have since pushed prices to a new record high of \$3.345 on March 13th. Connecticut retail gasoline prices are now 65 cents higher than a year ago, an increase of 24%.

did you know?

Each additional \$1 per barrel in the price of oil adds approximately 2.4¢ per gallon to the price of gasoline.



Fluorescent Bulbs (cont'd)

mercury vapor in the typical room when a compact fluorescent was broken. Testing was performed on a variety of sizes and brands of the bulbs. The study concluded that to minimize exposure to mercury vapor when a bulb is broken, the following clean-up strategies should be adhered to:

- Ventilate the room by opening up windows, and leave the room for 15 minutes;
- Pick up as much of the broken glass as possible, while wearing disposable gloves. Use two index cards or other stiff paper to get the bulk of the material picked up;
- Wipe the area with a wet wipe or damp cloth;
- Pick up fine debris and dust with duct tape or masking tape;
- Put all broken glass and contaminated clean-up materials in a glass jar with a metal screw top lid with gum seal.
- Discard the sealed glass jar in the trash, outside of the living quarters.
- Avoid vacuuming the area as this disturbs any residual material and can disperse it into the room. It can also contaminate the vacuum cleaner itself.
- If the breakage occurred on a carpet, consider removal of the carpet. If the carpet is not removed, ventilate the room for the next several times the vacuum is used.

For more information on the Maine study, see <http://www.maine.gov/dep/rwm/homeowner/fluorescent.htm>.

Green Building Regulation (cont'd)

Building Council. The regulation mandates that certain criteria are met. Like LEED, they will allow the choice of a variety of other measures to provide flexibility in meeting the regulation. In conjunction with the regulation, a Compliance Manual has been developed to guide building teams on how to meet the standard.

High performance buildings start with good planning. The regulation requires that an integrated design process be followed and that a third-party commissioning agent participate in the project from start to finish to ensure that planning, design, and construction oversight is maintained throughout the project. Also required is a 21% improvement in energy efficiency over a modeling baseline. A number of other requirements are included relating to reduced water use, integrated pest management, recycling, indoor air quality, and consistency with the state plan on conservation and development – to name a few. While there is expected to be a slight price premium (around 2%) associated with high performance building construction, that premium should go down and possibly disappear as architects, engineers, and construction teams become more familiar with the regulatory requirements. In addition, some savings will be realized from reduced energy consumption.

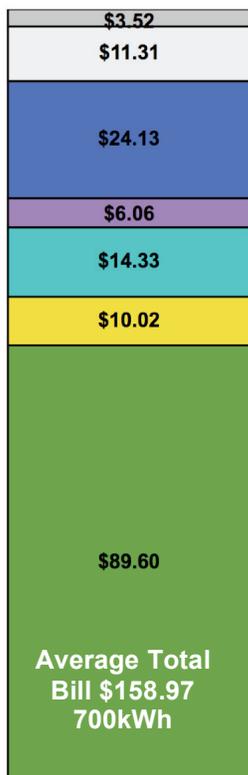
Public comment on the draft regulation was announced on March 11, 2008 in the Connecticut Law Journal. A public hearing will be held at the Office of Policy and Management building complex, Conference Room A/B, 470 Capitol Avenue, Hartford, at 1:00 PM on Friday, April 11, 2008.

New Residential Electric Rates

The Charges

- **Generation Services Charge (GSC)** is the price you pay for electric supply, which is open to competition. The price reflected here is for Standard Service supply, which is purchased by the utility on the customer's behalf
- **Transmission Charge** is for delivering electricity over high voltage lines and pays for upgrades to the transmission system in New England
- **Distribution Customer Service Charge** is a flat fee paid to the utility for its customer service, billing and other services
- **FMCC Delivery Charge** pays certain costs associated with ISO New England and federally-levied charges to ensure system reliability, such as Reliability Agreement fixed costs and ISO Load Response Program Costs
- **Distribution Charge** is for delivering electricity over the poles and wires to homes and businesses
- **Competitive Transition Assessment (CTA)** pays Connecticut's two electric distribution companies to recover past investments in generation assets (also called stranded costs)
- **Combined Public Benefits Charge** is comprised of the following three charges:
 - **Conservation and Load Management Program** charge to fund programs that promote energy conservation and efficiency
 - **Renewable Energy Investment** charge to fund programs that promote the use of renewable (or environmentally friendly) fuel sources, such as solar power
 - **Systems Benefit Charge** to fund public benefits such as public education and hardship protection

UI Average Residential Bill



Effective 1/1/08

CL&P Average Residential Bill



Effective 2/1/08

E85 Available at Additional State Fleet Filling Stations

E85 is defined as a gasoline and ethanol mix containing 85% ethanol and 15% gasoline. Vehicles that can use E85 or gasoline are defined as flex fuel vehicles. Federal regulation requires that 75% of all new fleet light duty vehicles purchased must be alternative flex fuel vehicles. The state is currently in compliance with this requirement. As of June 2007, 39% of the Department of Administrative Services (DAS) fleet, or 1,752 vehicles, are flex fuel. In addition, 62 vehicles in the Department of Transportation's (DOT) fleet are flex fuel. However, as a result of limited E85 infrastructure for fuel delivery, these vehicles have been primarily run on gasoline, not E85.

In July 2007, Governor Rell released a report examining the state's alternative fuel strategy relative to federal requirements. The report recommended a limited investment in E85 infrastructure to increase the amount of E85 being utilized. In support, OPM identified and provided funding to convert two additional fuel pumps to E85 at state fleet filling stations. The DAS and DOT determined that large concentrations of flex fuel vehicles are in use as part of the state fleet in the Hartford and Norwich areas. In February 2008, two new additional E85 pumps have been added to the Buckingham Street station in Hartford and the Salem Turnpike station in Norwich. These are in addition to the existing E85 fuel pumps already located in Danbury and Newington.

With the addition of these two fuel pumps, DAS estimates a potential increase of eight (8) times the current usage in E85 fuel. In 2005, approximately 25,000 gallons of E85 was pumped. With the additional two fueling pumps, an estimated 200,000 gallons of E85 could be utilized by state fleet vehicles.

While E85 has a great deal of support at the federal level, OPM Energy has concerns about its long term viability and, therefore, believes a *limited* investment in E85 infrastructure is prudent. E85 is less efficient and more expensive than gasoline, resulting in a 30% reduction in mileage per gallon with a price premium. In addition, the increased demand for corn-based ethanol has increased the cost of purchasing corn, not only increasing the cost of ethanol, but raising the cost of all food products with corn-based additives.

At this time, the use of E85 in state fleet vehicles will help state government reduce dependence on foreign supplies of fossil fuel and help support the domestic production of a renewable energy source. As research continues, and if breakthroughs are made regarding cellulosic ethanol production, a substantial investment in E85 infrastructure may be warranted.

Biodiesel Training for Local Code Officials

The establishment of a local biodiesel industry is an important step toward diversifying Connecticut's energy supply, meeting more stringent environmental goals, and creating a new green jobs industry. Since biodiesel technology is fairly new to most people, OPM Energy took the initiative to develop a training program to help local officials understand the nature of the production process.

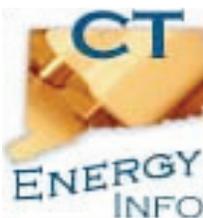
Under the auspices of an ad hoc state agency – the Biofuels Working Group – OPM Energy coordinated a training program for local fire and building officials. The purpose of the training was to educate local fire and building officials on the biodiesel production process, applicable state regulations and fire code. This effort was in line with Governor Rell's *Connecticut Energy Vision* goals for utilization of clean and renewable fuels, and 2007 legislation creating state grants for biodiesel producers and distributors.

The curriculum for the training was developed by OPM Energy, the Department of Environmental Protection (DEP), the Office of the State Fire

Marshal and the Connecticut Biodiesel & Bioheat Association. The training was offered through the Department of Public Safety's Office of Education and Data Management at six locations across the state during the month of February. Approximately 345 local code officials participated statewide.

The training sessions provided a unique opportunity for state agencies and the biodiesel industry to partner. This type of training helps establish a consistent regulatory/code review process for an important emerging technology in Connecticut's energy future.

OPM Energy wishes to thank the Connecticut Biodiesel & Bioheat Association, the Office of the State Fire Marshal and the DEP for making this training possible.



Visit www.ctenergyinfo.com for information on energy-related subjects and strategies for lowering energy consumption and costs in Connecticut. CTEnergyInfo is a joint venture of the DPUC and the Institute for Sustainable Energy providing a resource to consumers that will help inform their energy choices.

Connecticut Energy Advisory Board (CEAB) Regular Meetings
April 4th and May 2nd at 10:00AM
CERC, Brook Street,
Rocky Hill
www.ctenergy.org

Energy Conservation Management Board (ECMB) Regular Meetings
April 19th and May 14th at 1:00PM
DPUC 10 Franklin Square,
New Britain
www.state.ct.us/dpuc/ecmb/index.html

Connecticut Clean Energy Fund (CCEF) Regular Meetings
March 31st and April 28th at 12:00 p.m.
200 Corporate Place 3rd Floor,
Rocky Hill
www.ctinnovations.com

Governor's Steering Committee on Climate Change
Quarterly Meeting
March 26th at 1:00PM
Russell Room, DEP 79 Elm Street,
Hartford
www.ctclimatechange.com

Low Income Energy Advisory Board (LIEAB) Regular Meetings
April 9th and May 14th at 10:00
Location TBD
http://www.ct.gov/opm/cwp/view.asp?a=2994&Q=386262&opmNav_GID=1808

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