BREEE News V43
Boulder Renewable Energy & Energy Efficiency Working Group
http://boulderenergy.org
12/21/05

> "It is in the best interests of the citizens of Colorado to develop and utilize renewable energy resources to the maximum practicable extent."
>
> - Colorado Public Utilities Commission's Rules for Implementing Amendment 37

PUC Issues Order Adopting Rules For Amendment 37

The Commission issued a 100 page decision on December 15th, based on their deliberation of October 7th. The first 60 pages are discussion of the rules. The last 40 (or so) pages are the rules themselves.

The rules are "…subject to (a) 20-day period for filing of applications for rehearing, reargument or reconsideration" that started 12/15/2005.

http://www.dora.state.co.us/puc/decisions/2005/C05-1461_05R-112E.pdf

I believe this is a workable set of rules for implementing Amendment 37. There will be a lot of "devils in the details" of exactly how Xcel and other qualifying utilities choose to carry out these rules, particularly in the areas of administration costs, cost-recovery (how much our rates will go down or up), and how large solar system bidding will be handled. These details will be worked out as we go.

There is one area that impacts the City of Boulder involving ownership of RECs for "qualifying facilities" (e.g., the hydro generators the city owns) that will see lots of attention. This issue does not impact new systems at all.

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Details from the rules:

1. Full rebates are available to solar systems installed within the utilities service territories on 12/1/2004 and thereafter.
2. The "SO-REC purchase" part of the rebate (see below) will be offered to systems installed before 12/1/2004 and to at least some off-grid systems. The rules and plans seen so far do not specify exactly how this will work, but a one-time offer to purchase SO-RECs must be made by 3/31/2006.
3. A third party administrator will not be used. Xcel (and other utilities) will administer their own programs for implementing A 37.

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Xcel Requests Tariff Implementing Rebates for Small Solar (< 10 kW)

Rebate program and tariffs begin 1/1/2006. Must still be approved by the PUC.

http://www.dora.state.co.us/PUC/docket_activity/filings/PSCo_AL1448_RESA.pdf

The following rebate calculations are based on conversations with Ron Miller of Xcel and are subject to approval by the PUC.

These notes apply to residential and commercial PV systems that are **10 kW in size** or smaller in Xcel's territory.

For an on-site solar system installed in a reasonably good location (not shaded, mostly facing South and near a 40 degree tilt angle) the total rebate will be $4.50 per DC Watt (Watts STC or nameplate watts).

True single-meter, single-register, net metering applies. Excess production (solar system produces more than your home uses) will be carried over as a kilowatt-hour credit to the next month. Xcel will issue a check for any remaining excess production at the end of a calendar year.

More specifically, the rebate will consist of 2 parts - a standard rebate plus a fee paid to purchase the Solar On-site Renewable Energy Credits (SO-RECs) produced by your system.

The standard rebate will be $2 per DC watt STC (Standard Test Condition or nameplate watts).

The calculation for the purchase of your SO-RECs is:

SO-REC purchase = $2.50 times (nameplate DC watts) times (installation adjustment factor)

$$\text{installation adjustment factor} = \frac{\text{(PVWatts annual kWh output for system as installed)}}{\text{(PVWatts annual kWh for system if installed as fixed tilt, 40 degrees tilt, S orientation)}}$$

If the (installation adjustment factor) is between 1.1 and 0.9, set the (installation adjustment factor) to one.

You can run PVWatts for yourself at

http://rredc.nrel.gov/solar/codes_algs/PVWATTS/version1/Colorado/

Some examples of rebate calculation using the PVWatts standard "Derate Factor" of 0.77 are below. Note that you may need to use your actual inverter efficiency, etc. to calculate the derate factor for the system components installed on your building. Numbers in red below are calculated from PVWatts.

A) Boulder. 2 kW DC nameplate, S face (180 degrees azimuth), 40 degrees tilt

Standard rebate = $2 * 2000 = $4000

SO-REC Purchase:

Installation adjustment factor = (2917 / 2917) = 1

SO-REC Purchase = $2.50 * 2000 * 1 = $5000

Total rebate = $9000

B) Boulder. 2 kW DC nameplate, S face (180 degrees azimuth), 10 degrees tilt

Standard rebate = $2 * 2000 = $4000

SO-REC Purchase:

Installation adjustment factor = (2634 / 2917) = 0.902

Since the IAF is between 1.1 and 0.9, set the IAF to 1

SO-REC Purchase = $2.50 * 2000 * 1 = $5000

Total rebate = $9000

C) Boulder. 2 kW DC nameplate flat (no tilt).

Standard rebate = $2 * 2000 = $4000

SO-REC Purchase:

Installation adjustment factor = (2384 / 2917) = 0.817

SO-REC Purchase = $2.50 * 2000 * .817 = $4085

Total rebate = $8085

When you sell your SO-RECs, you are selling the "solarness" of the electricity generated by your PV (photovoltaics or solar electric) system to Xcel. This means that Xcel takes legal claim to all of the pollution savings, greenhouse gas savings, and other environmental or green attributes of your electricity for 20 years.

Technically, after you have sold your SO-RECs, you cannot claim that your home is solar powered. You cannot claim that your electricity is carbon-free or climate-neutral. You can, technically, claim that you have a solar system on your house.

More details and clarity on the rebates can be (or soon will be) found at Xcel's website.
http://www.xcelenergy.com/solar

We are still waiting to hear details of Aquila's solar rebate program.

The renewable energy activists and manufacturers involved in Core37 are continuing to analyze the rules. If we find any serious flaws we may ask for quick action from you in early January. And we must continue vigilance over the next few years to see that Amendment 37 is implemented as the people intended.

Peace, joy, and happiness to you and yours during this holiday season. And wishing all of us a very sunny, bright, and ever more sustainable New Year!

Ken Regelson

Hot Picks

Senator Ken Salazar Hosts a Renewable Energy Summit in Denver 1/11.

Register at:
http://www.salazar.senate.gov/contact/coenergyreg.cfm

From Craig Cox.

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1/14. Boulder. Small fee. Boulder Valley Relocalization Conference
1/20. 5:30 PM. Boulder. CRC's Birthday Party, Awards Dinner and Fundraiser.
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To Submit to BREEE News – email Regelson@mac.com. Put BREEE News in the Subject. Suggest a title and a 2 or 3 sentence summary. Include a link to the original article or a web page, or provide your email address, for more information.

Edited and distributed by Ken Regelson. Articles that do not list who submitted them are probably from Ken.

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From Boulder & Colorado:

Planned R & D Cuts at NREL a National Shame

As many as 100 jobs will be cut due to congressional pork.

http://www.renewableenergyaccess.com/rea/market/business/viewstory?id=40762

Boulder Council Study Session on GHG Reduction Funding

http://www.freerepublic.com/focus/f-news/1538947/posts

From Morey Wolfson.

Xcel Solar Energy Website

http://www.xcelenergy.com/solar

From Morey Wolfson, Ron Miller.

Xcel Files for Start on Solar Rebates

Says 1% rate increase will raise $22 Million. This is the maximum amount of rate increase allowed by Amendment 37. It is also the amount that Xcel will raise rates starting 1/1/2006 to kick-off the solar rebate program.

http://home.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_view&newsId=20051201006045&newsLang=en

From Rick Gilliam.

Colorado Could Be the Next "Solar State"

http://renewableenergyaccess.com/rea/news/story?id=40089

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Calendar:

1/11 Denver. Senator Ken Salazar Hosts a Renewable Energy Summit

Register at:

http://www.salazar.senate.gov/contact/coenergyreg.cfm

From Craig Cox.

1/14. Boulder. Small fee. Boulder Valley Relocalization Conference

9 AM - 6 PM. Glen Miller Ballroom. University of Colorado.

National speakers. Local exhibits and displays. Expecting 1000+ people.

http://www.boulderrelocalization.org/

1/20. 5:30 PM. Boulder. Center for ReSource Conservation's Birthday Party, Awards Dinner and Fundraiser.

Bid on a 2 kW solar system donated by Namaste Solar

At The Boulder Theater. Contact Jenny Hampton, jhampton@conservationcenter.org

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4/24 - 29. CRC Photovoltaic Design and Installation Workshop.

Participants in the PV Design & Installation workshop learn how to use PV technology to produce electricity from the sun through practical design and installation of PV systems. Taught by a professional solar energy educator from Solar Energy International (SEI).
Cost: $800. Early Bird $700 if you register before January 15th.
More info: www.conservationcenter.org
To register, email: aellsworth@conservationcenter.org

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From Elsewhere:

Short Takes

New Jersey considers doubling renewable energy standard.
http://renewableenergyaccess.com/rea/news/story?id=39864

Washington State Clean Energy Ballot Initiative for 2006.
http://www.bizjournals.com/industries/energy/energy_conservation/2005/12/19/seattle_story6.html

An Albuquerque initiative sets aggressive renewable energy goals.
http://alibi.com/editorial/section_display.php?di=2005-11-24&scn=feature#13318

Honda gets into the PV game. Plans to manufacture thin-film solar electric cells starting with a 28 MW manufacturing plant in Japan.
http://www.autoindustry.co.uk/news/19-12-05_12

Solar electric (PV) panels help power a Prius. (The perfect gift for the Prius owner in your life). Improvement in gas mileage is small but supposedly noticeable.
http://solatecllc.com/

Tax incentives explained in plain English.
http://www.energytaxincentives.org/

Elegant Wind Power. Click on "qr display" link on the left to see an interesting (but possibly highly distracting) advertising opportunity.
http://www.quietrevolution.co.uk/

Federal subsidies to new nuclear power plants are worth 3 to 8 cents per kWh. "…the majority of the cost of these new plants is being paid by the public, though all of the profits … will be retained by the investors. Studies on the economics of nuclear power …ignore baseline subsidies (worth 0.8-4.2 c/kWh) to nuclear in their calculations of economic viability..."
http://www.earthtrack.net/earthtrack/library/NuclearSubsidies2005_NPRI.ppt

"The world has suffered more than 200 billion dollars in economic losses as a result of weather-related natural disasters over the past year, making 2005 the costliest year on record."
http://www.truthout.org/docs_2005/120705E.shtml

Climate change puts our fish in hot water (and at risk).
http://www.fishupdate.com/news/fullstory.php/aid/3368/WWF_report:_climate_change_puts_fish_at_risk_.html

From Blake Jones, Morey Wolfson, Rick Gilliam, Evan Ravitz, and others.

COP11 in Montreal: a Last Minute "Montreal Action Plan"

COP11 is the United Nations Conference of the Parties on implementing and extending Kyoto.

A last minute "Montreal Action Plan":

"…calls for binding commitments to cut greenhouse emissions beyond 2012 when the current Kyoto Protocol expires."

(This in spite of very active opposition to almost anything climate change related from the Bush administration - Ken)

More than 40 decisions were made.

http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/press051210_cop11.pdf

http://www.chron.com/disp/story.mpl/world/3515598.html

http://www.cbc.ca/news/background/kyoto/

Nanoscientists and Biologists Copying, Co-opting Nature for Solar Fuel

"Making solar energy practical would require boosting efficiencies and cutting the cost of producing solar electricity at least 5 to 10 times over, to about two cents per kilowatt hour. Reckoning by past advances in solar cells and declines in the cost of solar electricity, experts in the field say they normally would expect to deliver 2-cent solar power in about 20 to 25 years.

Nanotech experts suggest they can cut that time in half.

'PV is ripe, it really is,' said Ryne Rafaelle, director of the NanoPower Research Lab at Rochester Institute of Technology, referring to photovoltaics or solar cells. "PV is definitely it right now."

Paul Alivisatos, an associate director of the Berkeley lab and head of its Molecular Foundry, is a nanotech pioneer.

'There's a feeling,' said Alivisatos, "that we could find a way to really use solar energy on a large scale within 10 to 15 years.'"

http://www.insidebayarea.com/sanmateocountytimes/localnews/ci_3256612

From Morey Wolfson.

Sonoma County Sets Aggressive GHG Reduction Targets

"Sonoma County's target for reducing emissions—25% below 1990 by 2015, the boldest of any U.S. community. Other Sonoma U.S. firsts:

all nine cities and County commit to reducing GHG emissions
all measure emissions from their internal municipal operations
all set targets for reducing emissions from internal municipal operations
all set targets for community wide emissions reduction."

http://www.skymetrics.us/

Solar Energy Permit Fees in California Vary Wildly

" Saratoga, for example, charges $95 for a permit to install solar panels on a house. Yet in Los Gatos, two miles away, city planners will sock a homeowner with a $1,287 bill for a permit to install the same system.

The findings come from a survey of 40 cities in San Mateo, Santa Clara and San Benito counties by the Loma Prieta Group of the Sierra Club."

http://www.mercurynews.com/mld/mercurynews/living/health/13273452.htm

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4 out of 5 Executives Surveyed… Business Week Articles on Climate Change.

"On Nov. 21 power company executives from all over the country gathered … to meet with GE CEO Jeffrey R. Immelt and his team. The day was overcast and cold, but the discussion was about the warming climate.

At one point in the meeting, David J. Slump, GE Energy's chief marketing executive, asked for an informal vote. How many of the 30 or so utility and GE business executives thought that, *once President George W. Bush was no longer in office, the U.S. would impose mandatory curbs on the emissions of carbon dioxide and other greenhouse gases linked to global warming? Four out of five of them agreed.* 'Forget the science debate,' says Cinergy Corp. (CIN) CEO James E. Rogers, who was at the meeting. 'The regulations will change someday. And if we're not ready, we're in trouble.'" (emphasis added)

http://www.businessweek.com/magazine/content/05_50/b3963401.htm

The full set of articles is at:
http://www.businessweek.com/magazine/toc/05_50/B39630550carbon.htm

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EPRI: Driving the Solution: The Plug-in Hybrid Vehicle

From the Electric Power Research Institute's Journal (EPRI - pro everything electric) article on PHEVs:

"…with the cost of gasoline at $3 per gallon and the national average cost of electricity at 8.5 cents per kilowatthour - a PHEV runs on an equivalent of 75 cents per gallon. And given that half the cars on U.S. roads are driven 25 miles a day or less, a plug-in with even a 20-mile-range battery could reduce petroleum fuel consumption by about 60%…

…But is there a market? In a 2001 study, EPRI found that 30-50% of consumers surveyed would choose a PHEV even if it were priced up to 25% higher than a $19,000 conventionally powered vehicle. What's more, 63% of respondents preferred plugging in a vehicle at home to going to the gas station. At the time of that survey, the U.S. national average price of gasoline …. was projected to be $1.65."

PHEV prototypes are being built based on a Sprinter van with help from EPRI.

According to a study by the California Air Resources Board "Using today's national grid, a battery-powered electric vehicle generates only a third of the greenhouse gases produced by an equivalent gasoline vehicle."

http://www.epriweb.com/public/000000000001012885.pdf

(This is the end of BREEE News)

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