Lathrop is going GREEN—Vol. 1, No. 3 - April, 2009

The Lathrop GREEN SHEET

An occasional newsletter from the Lathrop Community's Green Committee

The Lathrop Communities (Affiliate of the Kendal Corporation), 100 Bassett Brook Drive, Easthampton, MA, 01027

WHY? WARS/RISING OCEANS/MELTING GLACIERS/STORM SURGES/POLAR BEARS/JELLY FISH/...

A "GREEN QUIZ"

by Chuck Gillies (Answers on page 4)

1. Where does most of our oil come from?
   (a) Saudi Arabia (b) Venezuela
   (c) Canada (d) Mexico (e) Nigeria

2. How much of our energy is produced by alternate (solar/hydro/geothermal/biomass/wind) energy?
   (a) 0 - 2 % (b) 2 – 5% (c) 5 – 10%
   (d) 10 – 15 % (e) more than 15%

3. Which state produces the most total CO_2?
   (a) Wyoming (b) California
   (c) Texas (d) Pennsylvania (e) New York

4. Which state has the most total wind power installed?
   (a) Vermont (b) California (c) Texas
   (d) Minnesota (e) Iowa

5. Which portion of our economy consumes the most energy?
   (a) Transportation (b) Industrial
   (c) Residential (d) Commercial

6. What is "albedo?"

7. Who is the new Energy Dept. Secretary?

8. Who is the new Interior Dept. Secretary?

9. Who is the new head of the EPA?

10. What is the I.P.C.C.?

11. Who is Carol Browner?

WHAT YOU CAN DO (LATHROP'S "BEST PRACTICES")...

- ☐ Reduce, reuse, recycle;
- ☐ Turn out the lights!
- ☐ Turn down water heater (= 120°);
- ☐ Use programmable thermostats;
- ☐ Buy Local;
- ☐ Install CFL light-bulbs;
- ☐ Cloth bags to the grocers;
- ☐ Power strips for chargers, etc.;
- ☐ Keep tires properly inflated!

WHAT LATHROP WILL DO ...

Maintaining optimum car tire pressures does wonders to extend tire life and improve gas mileage. Lathrop staff will conduct a "Mobile Tire Pressure Clinic" on Earth Day, April 22nd. We'll come to your place, check your tire pressures, adjust them if necessary. Reminder and instructions coming a day or two before.

A LATHROP STAFF "GREEN" CONTEST:

Lathrop Staff are doing their part, too, in the effort to make Lathrop more environmentally friendly. Staff will post their "green" actions on the Mother Earth bulletin board. The person with the most suggestions wins a "green bag" prize on

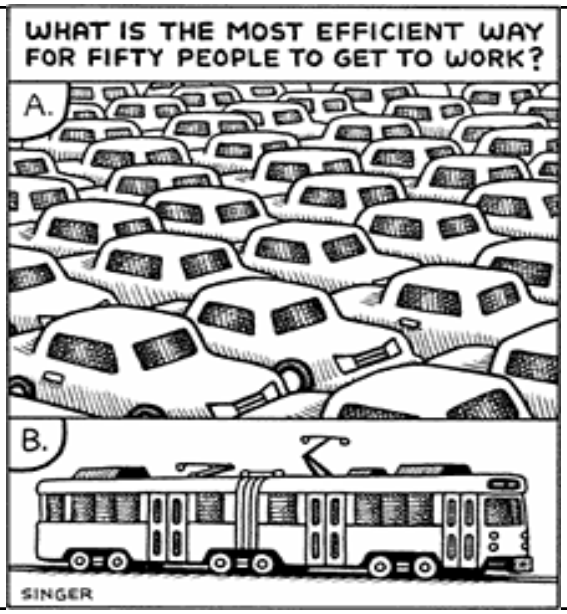
EARTH DAY, APRIL 22, 2009.

Some Light on Mercury

- by Barbara Cavalieri

Many of us have already struck a blow against climate change and foreign oil by switching to compact fluorescent light bulbs (CFLs), thereby saving 75% of the fuel (and the emissions from burning it) needed for incandescent lighting. Thanks to Lathrop for donating some of the CFLs! Here's the next step: when you need more CFLs, act to minimize mercury pollution as well. Choose EarthMate bulbs, which contain only about 25% as much mercury as standard CFLs.

The US government has just called for negotiation of an international treaty to cut mercury pollution, which they call the world's gravest chemical problem. Mercury is especially toxic to children and fetuses, causing neurological damage. Its major source is the generation of electricity by burning coal, from which airborne mercury is released and eventually settles into soil, lakes and oceans. There, mercury is converted by microorganisms to methyl mercury, an especially dangerous form that accumulates in higher organisms. Hence, the EPA has advised against eating more than one meal per week of fish caught locally in the US.



Although mercury is an essential component of CFLs, their use decreases mercury pollution because, compared to incandescent lighting, 75% less electricity is required to run CFLs. Therefore their use consumes less coal—which accounts for 50% of US power generation. CFLs also last much longer (up to 13x) , thereby compensating for the additional energy needed to make them initially.

Nonetheless, as CFLs become the standard means of lighting, their eventual disposal will constitute an increasing source of pollution. It is important to seek safe disposal for used CFLs. Lathrop will designate locations at which they can be left. CFLs are safe to handle as long as they are unbroken. In case of a bulb break, ventilate the area, put on rubber gloves and pick up all debris using a damp paper towel and sticky tape. Seal it all in a plastic bag and bring to the safe disposal site. The amount of mercury in one broken bulb is roughly equivalent to the amount in a meal of local fish, but it is less dangerous because the mercury is not methylated.

Low-Mercury EarthMate CFLs are available from Energy Star Lights (800-473-9150, or www.estarlights.com). They are mini-sized, give soft light and are available in wattages that correspond in brightness to incandescents of 40 to 150 watts, as well as in several three-way sizes. They are not for use in dimmable fixtures. Prices are well below those in retail stores, thanks to subsidies from local electric utility companies.

Barbara Cavalieri, Lathrop (N) resident, retired last year as Prof. of Environmental Science from the State University of New York (SUNY), Purchase.

HOW ABOUT THIS?

The concentration of CO_2 in the atmosphere increased .9% per year in the Nineties, but from 2005 through 2007 the percent increase was 3.5% per year (a fourfold increase)! - Al Eipper

LIFE WITH A WIND GENERATOR

– by Klaus Kroner

The oil crisis in the early '70's gave our family cause to contemplate whether we could somehow conserve energy in our household. At the time we lived in a rural area on a west facing (windward) slope. We knew about the windmills out west which pumped water or generated electricity. After some research we realized that ours was not an ideal site for a wind-powered generator in that our location did not enjoy a high average wind speed, but still enough to be able to generate a good amount of electricity. So we decided to engage in what turned out to be a very exciting experiment. Since the proposed site behind our house was far enough from abutting property, a permit for the installation was obtained from the town.

We learned that, in those days, to get a wind generator of adequate size we had to import one from Australia. It was a 3kw machine with three 6-foot blades mounted on a three-legged 60 ft high steel tower. The feet were imbedded in 1 cu. yd concrete bases sunk into the ground. An electric cable was strung from the tower to our garage and connected to an array of 58 2-volt lead batteries (for a total of 116 volts). Since our house was of course wired for a.c., an inverter was required to change the wind-generated current from d.c. We then connected the inverter to the electric panel where circuit breakers gave us the option to switch between the wind generator and the commercial power supply. (Incidentally, we had to do this work ourselves as unionized electricians would not touch the job.)

Knowing the limitations of our new system, we did not connect it to the refrigerator, kitchen range, and the washing machine (we never owned a dryer). Also, in the desire to reduce energy consumption, we got rid of our freezer (my wife began canning). But we were able to run our light circuits off the wind most of the time. One amusing event comes to mind – one night, when the head of the local electric company happened to be attending a meeting at our house, there was a power outage on our street. To the embarrassment of our visitor, and the consternation of the repair crews trying to find the source of the outage, our house was all lit up.

A couple of years later our experiment came to an abrupt halt when someone decided to use the rotating wind generator blades as shooting targets. Replacing them, besides being a financial burden, would not guarantee that the vandalism would not be repeated. So we dismantled the system and were able to find another user for it.

Though the experience can hardly be called an economic success, it led us to be much more conscious about energy conservation, and we never again consumed the number of kwhrs as before. There was also the satisfaction in watching the blades turn in a stiff breeze generating power from an inexhaustible natural resource.

We followed this effort with other "green" measures, such as a wood burning stove and solar collectors for our domestic hot water.

Klaus Kroner, Lathrop Northampton resident , is Professor Emeritus, UMass/Amherst. (mechanical engineering).

DID YOU KNOW?

The U.S. possesses sufficient and affordable wind resources to obtain at least 20% of its electricity from wind energy (currently, approx. 1.0%) with no new technological breakthroughs, according to the Department of Energy's May 2008 technical report. - Am. Wind Energy Assoc. (AWEA).

In the Libraries....

Reviewed by Dick Bauer

Two articles from different issues of the Scientific American have been added to the Green Shelves. The first is by Nathan Falla entitled *The Greenhouse Hamburger* (February 2009). It tracks the environmental cost of producing various forms of meat for the table. Here's a factoid: pound for pound, beef production contributes more than 13 times as much to global warming as do the gases emitted from producing chicken. The bottom line isn't that we all ought to become vegans, but that we need to make some major modifications in our agricultural practices. The Lathrop Eat Well, Feel Better Committee is taking the Falla piece under advisement. There's some discussion and reflection grist here for all of us.

The second article is *The Power of Renewables* by Matthew Wald in the March 2009 issue. What Wald does is describe how the major forms of renewable energy work - solar-thermal, harnessing ocean wave power, geothermal; wind, and solar photovoltaic. What is the current status of each technology? What does it cost in cents/kWh? What are the advantages and drawbacks associated with each technology? Today renewables amount to less than 7% of U.S. energy consumption. What I came away with is appreciation for the total lack of a polemical slant in Wald's presentation. Here is where we are; here's what's involved in bringing this technology on line. Summary: there is no quick fix in the offing, but this is a critical issue for us and the generations coming after us.

A Closing Thought ...

"It is better to light one candle [CFL?] than curse the darkness." - Eleanor Roosevelt, or JFK or Chinese proverb.

ANSWERS TO "GREEN QUIZ"

1. Canada (21%), Saudi Arabia (12%), Mexico (10%), Venezuela (9%), Nigeria (8%) (*EIA/DOE, December, 2008*)
2. (c) 6 - 8% (from *Larry Ambs' talk*);
3. In order: Texas (most), CA, PA (Wyoming produces most *per capita*);
4. In order: Texas, Iowa, California, Minnesota. (from AWEA, December, 2008);
5. Industrial (32%), Transport (29%), Residential (21%), Comm. (11%) ('07-*EIA/DOE*);
6. The albedo of an object is the extent to which it reflects light from the sun. The range of possible values is from 0 (dark) to 1 (bright, such as snow). (from *Wikipedia*);
7. Steven Chu, winner of Nobel Prize in physics (1997), former professor of physics at U. of California, Berkeley;
8. Ken Salazar, former Colorado Senator;
9. Lisa Jackson, former NJ DEP Comm.;
10. Intergovernmental Panel on Climate Change - UN source of information.
11. Assist. to Pres. Obama for Energy & Climate Change. Former EPA Head.

DID YOU KNOW?

In Massachusetts when we buy gas we are paying 22% for federal and state taxes (at $1.89/gal., at $4.00/gallon it was 10.5%). In Europe they pay 60 - 75% in gas taxes.

The Lathrop Community Green Committee:

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