LIVING GREEN

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It Takes a Town

The 23,000 residents of Reading want to reduce the greenhouse-gas emissions created where they live. They're facing budget limits, inefficient buildings, and a major highway interchange that brings 377,500 vehicles through every business day. But at least they're getting started.

By David Talbot | November 18, 2007

SANTA CLAUS VISITS THE TOWN OF READING EVERY THANKSGIVING weekend. He ascends a stepladder in the classic New England town square and throws a ceremonial switch that sets oaks and maples aglow with energy-guzzling incandescent bulbs. But last year, officials proudly announced that two maples near Town Hall held strings of efficient light-emitting diodes, or LEDs, for the first time. The LEDs cost more upfront but consume just one-10th the electricity of incandescent bulbs, and they should last 20 holiday seasons.

The change seemed to be a no-brainer. After all, the bedroom community 12 miles north of Boston is one of 36 municipalities in Massachusetts (45 total in New England) that have signed on with Cities for Climate Protection, a campaign to help communities tally greenhouse-gas emissions and devise ways to reduce them. With guidance from this campaign - forged by the nonprofit International Council for Local Environmental Initiatives, known as ICLEI - municipalities around the world are organizing to fill the void between personal action and national policy aimed at slowing global warming and climate change.

Between ICLEI's campaign and other local efforts, "this is a 100-flowers-blooming situation," says Ian Bowles, Massachusetts's energy and environmental affairs secretary. "You have towns getting out and saying, 'We want to do something with our own municipal energy use, with our building code, with our capital plans.' " Indeed, in one of the state's most aggressive municipal efforts, Cambridge is seeking to slash peak-hours electricity consumption 15 percent by 2011 through a $100 million public-private effort. Medford may erect a small wind turbine to help power a local school. Even tiny Shutesbury is bolting solar panels to the roof of its elementary school.

Reading is at an earlier stage. Last year, the town spent $600 to join Cities for Climate Protection. A volunteer committee is now finishing a 67-page report of emissions-slashing ideas - 37 of them - that range from eliciting conservation pledges from businesses and residents to establishing a ride-sharing program. But executing the ideas will be another story. Take those holiday LEDs. When Santa reprises Reading's lighting rite next Sunday, the same incandescent bulbs will glow. It turns out that the lights - donated by the local chamber of commerce and electrified by the town - were purchased last year, so the town is planning to replace them with LEDs only as they fail. Throw away perfectly good bulbs? "That would be wasteful," says Peter Hechenbleikner, Reading's town manager of 20 years. That might seem logical, even earth-friendly, but I ran the idea past Stephen Selkowitz, who heads building-efficiency technology programs at Lawrence Berkeley National Laboratory in Berkeley, California. His verdict: Toss the incandescents now. He explained that since LEDs use just one-10th the electricity - which is inefficiently produced, mostly in fossil-fuel power plants - the 90 percent that's conserved far outweighs any lost energy and money invested in light bulbs.

AS A READING RESIDENT, I CAN REPORT THAT THE PACE OF change can seem glacial, when change requires money, consensus, government action, and - in particular - an appreciation of the problem's enormous scale. And as a science and technology journalist, I can report that the "glacial pace" metaphor is fast becoming obsolete. Three months ago, I was in northern Greenland, reporting a story on ice-sheet disintegration from atop an ice sheet four times the size of California and 2 miles thick in places. If that whole sheet melted, sea levels would rise 20 feet; throw in Antarctica's ice, and the oceans would rise 250 feet. Even a 3-foot rise would devastate low-lying coastal communities around the world, and anybody who has strolled the Cape Cod National Seashore knows that some of the region's most treasured natural areas would be lost (though there'd be fewer Nantucket beachfront property owners to complain about wind turbines). How fast could 3 feet come on? The Intergovernmental Panel on Climate Change (IPCC) - the international scientific body that assesses the state of the climate every few years - weighed in earlier this year. It concluded that human-created emissions are almost certainly to blame for recent warming trends. And, among other consequences, the IPCC said sea levels could rise a historically speedy 7 to 23 inches this century.

However, it may be that the IPCC lowballed the rising-sea danger. Richard Alley, a Penn State glaciologist who wrote the IPCC report's section on the earth's "cryosphere" (the icy parts), explained to me that vast glaciers in Greenland

with names like Kangerdlugssuaq and Jakobshavn are disintegrating, dumping ancient ice into the oceans at least twice as fast as they were just five to 10 years ago. But since the processes behind this abrupt speedup are poorly understood, they aren't reflected in the IPCC's computer models - and weren't part of the math that led to the 7-to-23-inch prediction. Another scientist who spends his days measuring ice, Eric Rignot of NASA's Jet Propulsion Laboratory in Pasadena, California, told me the new information suggests to him that the oceans could rise more than 3 feet this century. And that's just the sea-level issue; climate change brings other well-reported hazards. It can't all be stopped, but many scientists say the worst effects can be blunted through greatly reduced greenhouse-gas emissions.

What can a town like Reading do? It's not hard to see lots of potential. Walk through town, and you'll spot 100-watt bulbs blazing at noontime on people's front walkways. Around the schools, you'll find SUV gridlock - often just one child per car. Reading's MBTA station boards 667 people each workday, but only provides 12 spaces to lock bikes. There are no incentives for employees who work in the town center to commute other than by driving alone. But all this just means Reading is pretty much like any other American town. And it's not to say no efforts are underway. The Reading Municipal Light Department - a utility that serves Reading, North Reading, Lynnfield, and Wilmington - is spending $85,000 to study how to reduce demand and boost renewable-energy supply. And among other early town efforts, more bike racks are starting to pop up.

The Reading volunteer committee quickly figured out that cars and trucks traveling Interstates 93 and 95 within the town limits - 377,500 vehicles navigate the interchange of those two highways every business day - spew 20 percent of the greenhouse-gas emissions in Reading. "Regional transportation is a mess. Reading is caught in a web of cars. The way the infrastructure was built 50 years ago - it's killing us," says Ron D'Addario, a committee member and retired Winchester shop teacher. Even after deleting the highways from the calculation, they found that 57 percent of Reading's greenhouse-gas emissions comes from cars and trucks. Of the remainder, 26 percent comes from residences, 8 percent from municipal buildings and vehicles, and 7 percent from commercial buildings.

The committee concluded that reducing vehicle use should be the top priority. Efforts include applying for a $350,000 grant to fund a shuttle-bus service that might ferry residents to the train and launching a communitywide "no idling" campaign. Beyond transportation, other items include stepping up tree planting, expanding recycling, and beefing up climate education in local schools. "We have a lot we are proposing to do," Hechenbleikner said at a recent community forum. "We are not going to solve the global-warming and climate-change issues all by ourselves here in Reading, but we would rather be part of the solution than part of the problem."

Hechenbleikner drives a silver Toyota Prius and says he lights his house largely with compact fluorescent bulbs, which use one-fourth the energy of incandescent bulbs. As for the town's own buildings, they're not so efficient. Most painfully, the brand-new Reading Memorial High School - completed this year at a cost of $57 million - turns out to consume 30 percent more electricity than the school it replaced, even though it's no bigger. Part of this is due to wider use of electronics and more-robust ventilation systems. But, in contrast, the Whitman-Hanson Regional High School, which opened a year ago, is a nationally recognized "green building." There, the district paid a premium of about $2 million for efficient construction and rooftop solar panels - and will reap energy cost savings of at least $100,000 every year.

THE EFFORT IN READING IS JUST GETTING STARTED. DOES IT MEET the challenge? Many scientists say climate-change dangers call for reducing greenhouse-gas emissions below today's levels, even as world energy demand doubles by 2050. Put simply, this can't happen without a World War II-scale galvanization, and nothing of the kind is on the national drawing board. A scaled-down equivalent isn't on Reading's drawing board, either. "We're trying to cut back, but what we are probably doing is only stopping emissions from increasing so fast," D'Addario says. The climate committee is recommending that the town seek a 10 percent reduction in local greenhouse-gas emissions by 2012, but it remains to be seen whether Reading's Board of Selectmen will make it town policy to achieve such a goal.

What's clear is that, in addition to traffic, the town is taking a hard look at its buildings. "People will be upset they invested $57 million in the high school and to find out it's an electricity hog," concedes Mary DeLai, the director of human resources and finance for Reading schools. A campaign to shut off lights and computers when not in use and to fine-tune heating and ventilation systems helped yield a districtwide 10 percent savings in natural gas last year. It also produced a 5 percent electricity savings, but only in older buildings. DeLai is preparing to solicit proposals from contractors who could retrofit certain town buildings - including the high school - with the project costs financed by the resulting savings in energy expenses. Yes, this could mean replacing brand-new equipment at the brand-new high school. To some, that would probably seem a waste, like throwing away perfectly good holiday lights. But it would make just as much sense - and it would be a good start.

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