

THE NERGEIA.

the smart energy magazine for canadians - issue #1

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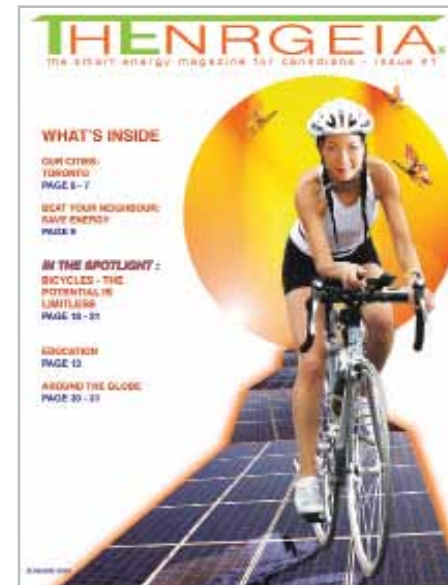
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ABOUT OUR COVER:

The concept of transformation from past forms of energy into smart energy is symbolized with a cyclist riding on a solar panel roadway with the sun background giving energy. The butterflies symbolize transformation from the lowly caterpillar into a vision of beauty. Our focus is on transforming into a better future with the knowledge we gain.

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DEAR READER

Why **THENERGEIA.**

In ancient times the Greek philosopher Aristotle coined the term **THENERGEIA**, this being the source of the modern word – energy. By naming our magazine **THENERGEIA**, we are linking ancient wisdom with the future.

Today, huge amounts of energy are being consumed, particularly in the rapidly growing cities in North America, and elsewhere.

- **THENERGEIA** is a resource of smart, alternative energy which will serve to build a safe, clean environment.
- **THENERGEIA** provides exciting challenges for you to step up and move forward with fresh concepts and opinions.
- **THENERGEIA** is your opportunity to re-claim safe environments everywhere.

SO ENJOY, PONDER AND CONTRIBUTE

Happy reading, and welcome aboard!

Régalez-vous de votre lecture et bienvenu à bord!

MISSION STATEMENT

Our mission is to be a resource that explores current and future innovative energy sources that have a positive impact on our environment. **THENERGEIA** is a venue for energy conscious participants of all ages to also submit new concepts and express opinions.

<http://www.thenergeia.com>

email: info@thenergeia.com



OUR CITIES

Sustainable energy in Toronto

THE ENERGY EFFICIENCY OFFICE

(EEO) is responsible for developing and co-ordinating the implementation of an energy efficiency and conservation strategy for Toronto. This is in response to the City's commitment to reduce carbon dioxide emissions by 20 percent, relative to 1988 levels.

Some of the initiatives the EEO has undertaken to reach this goal are the **Better Buildings Partnership, the Solar Neighbourhoods Project** and creating the City's Energy Plan.

ENERGY CONSERVATION

WEEK: COUNT ME IN!

Be part of an Ontario-wide effort bringing together the power of collective action to help create a culture of energy conservation in our lives - at home, at work and at play.

By signing up for the **Count Me In! Pledge** residents will start to receive information on tools and practices that conserve energy in ways that save money, benefit our environment, and secure the future of Ontario's energy supply.

In addition to helping you conserve energy every day, this information will prepare you for the big challenge day (Blackout Day) on August 14.

This is the day when everyone will put their new knowledge and tools to work and make a statement on what people can collectively achieve in energy conservation.

TAKE ACTION. TAKE PART. COUNT YOURSELF IN.

Toronto's bold new Climate Change, Clean Air and Sustainable Energy Action Plan (PDF) will see the City of Toronto and its residents, businesses and communities take action to cut greenhouse gas emissions, clean the air and create a sustainable energy future. The plan was crafted with substantial public and stakeholder input and is designed to achieve

and exceed the Kyoto greenhouse gas reduction target.

In addition to actions to green the City's internal operations, the plan outlines a number of actions that will benefit residents, businesses and community groups.

A LIVE GREEN TORONTO PROGRAM

This program is to encourage Torontonians to adopt more environmentally friendly lifestyles and reduce energy use at home, work and on the road a framework to renew Toronto's concrete high-rise residential buildings a pilot program for

residential solar hot water heating a "one-window" source of information on federal, provincial, municipal, private sector and community programs related to energy and the environment a plan to promote local food production and increase community gardens community energy planning a plan to double Toronto's tree canopy the development of a strategy to adapt to climate change a plan to shift taxis and limousines to low emission or hybrid technology. The plan calls for initial funding of \$42 million for energy conservation measures, \$20 million for renewable energy

projects and \$22 million for retrofitting City facilities.

CLIMATE CHANGE ADAPTATION

In addition to taking concrete action to reduce emissions and mitigate climate change, Toronto is also preparing to adapt to the long-term changes in our weather patterns that are already underway as a result of climate change. Learn more about the actions the City is taking to prepare for climate change.

<http://www.toronto.ca/changeisintheair/index.htm>

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ON YOUR MARKS, GET SET, GO!

ENERGY NEIGHBOURHOOD:

BEAT your neighbour, SAVE ENERGY

There is no doubt that saving energy is a good thing. It helps the environment and saves a lot of money. But have you ever thought of playing in a team to reduce your energy consumption?

The Energy Neighbourhood project took this idea from Belgium to eight other European countries. Some eight to 12 households form a team, the so-called 'Energy Neighbourhood', and compete with other neighbourhoods. Every neighbourhood also accepts a bet offered by the city: in order to win the bet (and the accompanying prize) the neighbourhood has to make energy savings of at least 8% within six months compared to the previous year. Each team is coached by an 'Energy Master' who pulls the team together and provides the right incentives. Last but not least, the municipality plays the role of referee by ensuring that the teams abide by the rules. They also provide information on energy savings and organise meetings with the neighbourhoods.

"People become really excited about playing in a team to save energy," says project coordinator Anke Merziger. "In England neighbours meet in a pub to share tricks about how best to save energy. I believe it is the social aspect and the competition at the local as well as European level that makes the project so successful."

The campaign currently runs in nine European countries and involves several hundred districts. "The goal to reduce energy consumption by 8% will



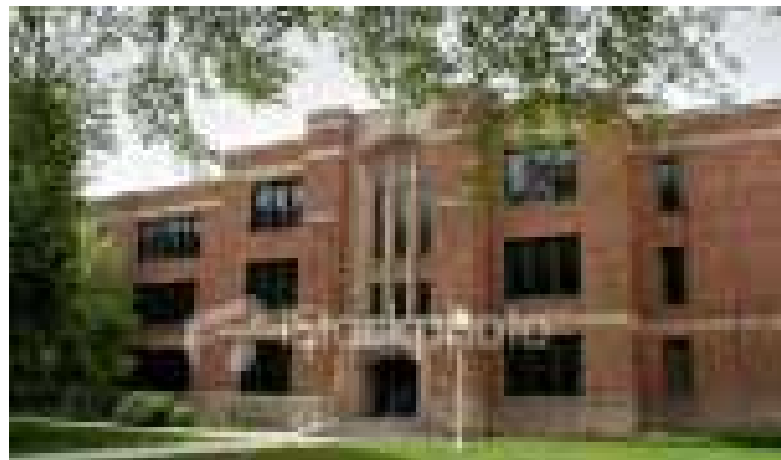
be largely achieved by most neighbourhoods. The most successful communities even save some 25%," explains Anke. The best Energy Savers from each country will be invited to an awards ceremony in Brussels in October 2009.

The aim is to bring the Kyoto protocol closer to Europe's citizens. That is why the margin was set at 8% like the emission target fixed in the protocol. "I believe that the policy message is transmitted much more effectively because the participants are actively involved," concludes Anke.

<http://www.energyneighbourhoods.eu> Peter Löffler,

The goal to reduce energy consumption by 8% could easily be applied to Canadian neighbourhoods. A great way to meet your neighbours and transform energy together.

Courtesy of Peter Löffler, Andrea Pascal and Stella Willborn, EACI



WHY EDUCATION?

The use of initiatives in schools to promote energy awareness, and inspire changes in behaviour, links with many aspects of the formal educational curriculum. It can be incorporated into lessons in human, social and physical sciences as well as aspects of ethics. Inspiring students will have the effect of influencing their wider social community via family and friends.

EDUCATION IS, OF COURSE, AN AREA WHERE DECISION-MAKING

on course content, outcomes and goals in Canada is made at the Provincial level with appropriate considerations being made at Regional Levels. Cultural aspects, age, and provincial priorities all have an impact on the learning environment and its policies. However, global energy issues have many challenges in common and their inclusion in the curriculum should be on a truly International scale. The impact will be greatest when the learning process focuses on local action. Energy, its

production, conversion and use already has a significant impact on environmental studies. Therefore, classroom curriculum should bring together energy, environment and economics integrated throughout the subject areas. This provides methods for students to have a rational basis for decision making.

While most environmental courses currently incorporate energy studies, these are often in the beginning stages dealing with sustainable energy.

There is still a need to increase the development of energy education programmes to set sustained changes in individual behaviour.

Such courses should focus on the value of renewable and non-renewable resources of energy.

WHO WOULD RECEIVE SUCH COURSES?

What would be the objectives of this 'energy education'? And what methods might be used? Here are some considerations...

- 1. As heirs to the outcomes of energy improvements, all students, should be the recipients.*
- 2. A significant objective of energy education would be that young people become literate in the efficient and effective use of energy in their environment.*
- 3. Methods, spread throughout the curriculum, should include the identification of what society and individuals can do.*

ROLES

The different roles of various parts of society in energy use need to be emphasized in any educational initiative. Awareness of the energy that we use as individuals, families, households, students or organizations is very important. Education can provide a basis for understanding and a conduit for the information.

IN CANADA

Environmental Education, specifically focused on energy issues which will determine a safe, cleaner, environment is significantly moving forward in provinces.

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EDUCATION AND ENERGY

A DISTRICT SCHOOL BOARD OF NIAGARA SCHOOL TURNS GOLD

For several schools at the District School Board of Niagara, their efforts to go green have earned them silver and gold in the Ontario EcoSchools program. Ontario EcoSchools is an environmental education program that addresses both how schools are run and what students learn. Research shows that certified EcoSchools use 7% percent less electricity and 12% less natural gas than non-certified schools.

FOLLOWING SOME VERY DILIGENT AND EFFECTIVE WORK by both students and staff, the Eco-Hawks at Sheridan Park Public School in St. Catherines earned and maintained a gold certification in the Ontario EcoSchools Program. To earn the gold certification, students at Sheridan Park began an aggressive campaign to conserve electricity, increase the amount of materials they recycle and cut the amount of waste that ended up in garbage bins. The school's 168

page application for EcoSchools certification was even submitted on "good on one side" paper, which is paper that already has writing on one side

ENERGY CONSERVATION IS ONE OF THE TOP SCHOOL PRIORITIES. Outlined below are some actions taken. Using Smart Meters, electricity meters, natural gas meters and older dial meters, they measured and recorded electricity consumption every 15 minutes. They then did an inventory; this involved, best possible list of every electrical device that consumes electricity, how much electricity each use when it is on, and how long each device is on for each day. The results showed electricity usage on computers, lighting, printing, photocopying, heating and other devices. They then developed new programs to reduce energy consumption. They realized that they could save a tremendous amount of power by actions such

as switching off computers when not in use, and immediately after school, and turning off lights when out for recess. The **ECOHAWKS** at Sheridan Park Public School were recognized by a special visit and certificate from Peter Love, the province's chief energy conservation officer. Students showed Love a YouTube video they made about their power-saving efforts including an energy audit that cut school electricity use by 24%. Principal, JoAnna Roberto noted that the video entry received an honourable mention in the World Wildlife Fund's Power Down For The Planet Video Challenge. Peter Love praised students and staff for promoting energy conservation so energetically.

<http://www/dsbn.edu.on.ca/Schools/Sheridan>

Let us know about energy saving initiatives in YOUR school!

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FAMILIES ENERGY, AND THE ENVIRONMENT

More and more, families are motivated to save money by making changes around the home. The one predominant factor for households is to save money centres around energy changes; for example, on heating bills. Environmental awareness in most cases is low, so in order to address this problem, information about energy efficiency should be readily available. Given this type of information in Europe, 20% of the households surveyed had made a change in their behaviour towards the environment. Indeed, many times one small measure lead to the implementation of subsequent, more complicated

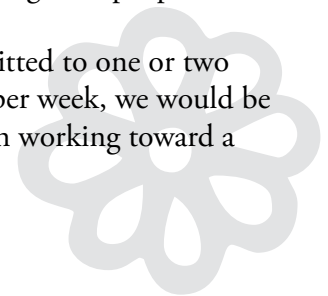
measures. In some cases, giving the householder just one low-energy light bulb led to the replacement of all lights with low-energy bulbs. The implementation of low cost measures is often preferred to higher cost measures due to the number of barriers. Some of these barriers include a fear of change or distrust of suppliers or products, financial concerns, such as poor incentives or lack of resources, and cultural, such as pressure from family or friends.

Many experts consider that the most efficient way of saving heating or cooling is simply reduce or increase by 1° the temperature that of our thermostats. One degree variation could lead to up to 10% energy savings. This will reduce behaviour such as sleeping with a blanket in the middle of the summer because air conditioning too high or walking around their apartments with a simple t-shirt in winter because heating is too high. Maybe the right choice of clothes together with a wiser use of the heating and cooling systems may have a positive impact on their comfort and also on their energy bills.

WITH THE RIGHT ATTITUDE THESE CHANGES CAN BE FUN.

Walking instead of taking the car takes longer but offers a chance to get fresh air, exercise, and possibly make new friends. In keeping with physical activity, there are additional family activities to consider which will help bolster a clean, safe environment and improve communication and social skills. For example, the occasional technology free games night at home will facilitate improvement in skills of socializing decision making and reasoning with people.

When each family is committed to one or two energy reduction activities per week, we would be impressed with the results in working toward a smarter environment.



Solar Water Heaters

A GREAT ALTERNATIVE

SOLAR ENERGY

Solar water heaters—also called solar domestic hot water systems—can be a cost-effective way to generate hot water for your home. They can be used in any climate, and the fuel they use — sunshine—is free.

HOW THEY WORK

Solar water heating systems include storage tanks and solar collectors. There are two types of solar water heating systems: active, which have circulating pumps and controls, and passive, which don't.

Most solar water heaters require a well-insulated storage tank. Solar storage tanks have an additional outlet and inlet connected to and from the collector. In two-tank systems, the solar water heater preheats water before it enters the conventional water heater. In one-tank systems, the back-up heater is combined with the solar storage in one tank.

Solar water heating systems usually cost more to purchase and install than conventional water heating systems. However, a solar water heater can usually save you money in the long run.

How much money you save depends on the following:

- * *The amount of hot water you use*
- * *Your system's performance*
- * *Your geographic location and solar resource*
- * *Available financing and incentives*

* *The cost of conventional fuels (natural gas, oil, and electricity)*

* *The cost of the fuel you use for your backup water heating system, if you have one.*

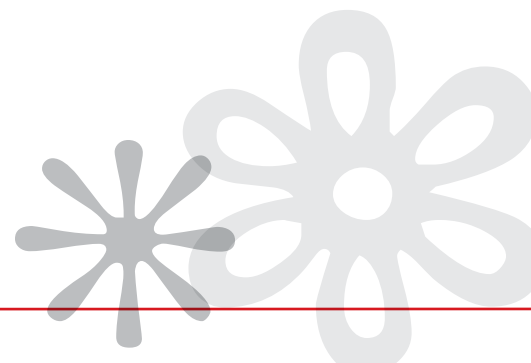
On average, if you install a solar water heater, your water heating bills should drop 50%–80%. Also, because the sun is free, you're protected from future fuel shortages and price hikes.

<http://www.energysavers.gov/>

GOVERNMENT GRANTS

Take advantage of Canadian government grant + Ontario or British Columbia rebate programs for

**THE SUN
HAS A LOT OF POWER
EVEN IN AREAS WHERE YOU
WOULD NOT EXPECT IT**



your home energy renovations.

Canada ecoENERGY grants — Canadian homeowners can get up to \$5,000 in home improvement grants from the Canadian government's ecoENERGY

EASY TO START — CANADA

All you do is make one call — 1-877-732-9888 — to book a home energy audit with a Home Performance Energy Advisor — your first step to qualifying for Canadian government grants + provincial rebates for home energy renovations. Book your energy assessment with a certified Home Performance Energy Advisor. Your Energy Advisor will help you make the right energy saving. Some conditions apply.

Home energy assessment — To qualify for ecoENERGY incentives you must get a home energy assessment before and after your upgrades. You will receive grants for improvements started after your first assessment.

Renovations — You can complete the improvements yourself or hire a contractor. We recommend you document your renovations with receipts, photos and product literature to be sure you get full credit for all improvements.

ONTARIO HOME ENERGY REBATES

Ontario homeowners can get cash back for your first ecoENERGY assessment with a Home Energy Audit rebate from the Ontario government. Canada grants — Tax-free grant amounts available

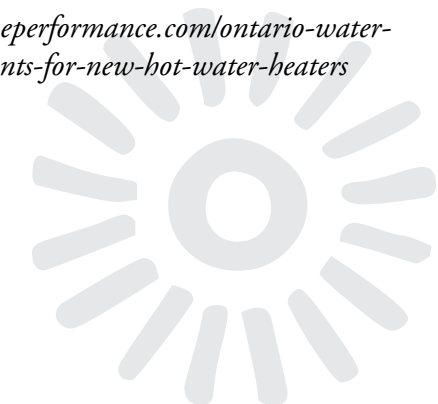
to BC homeowners from the Government of Canada. LiveSmart BC — The BC government subsidizes the cost of your first home energy assessment. This subsidy is subject to available funds. BC rebates — BC homeowners qualify for additional \$1,000 rebates from Solar BC when installing solar hot water systems.

ENJOY ALL THE BENEFITS - DO IT RIGHT

Each Canadian home has its own specific energy-savings needs, and yours is no different. The right renovations add up to big savings. By following the expert advice of a Canada-certified energy advisor, you'll make the energy renovations or "retrofits" that are right for your home — and help improve your energy costs and the Canadian environment.

Greater comfort — Your home will be warmer in Canadian winters, cooler in Canadian summers. Better health — You'll eliminate indoor health concerns like chills and drafts, and keep your home free of airborne pollutants and pollen.

<http://www.homeperformance.com/ontario-water-heater-rebate-grants-for-new-hot-water-heaters>



In the Spotlight

A photograph of two cyclists riding on a paved path through a park. The cyclist in the foreground is wearing a blue jersey and a black helmet, while the second cyclist is wearing an orange and black jersey. The path is bordered by a low concrete wall and a grassy area. In the background, there are trees and a fence. The overall scene is bright and sunny.

BICYCLES:

THE POTENTIAL IS LIMITLESS

by Vivian McKeown - Guest Editor

This environmental transportation option offers new ways to travel and explore cities. European cities, such as Barcelona Biking in Spain and Velib Bike Rentals in Paris have been particularly popular with visitors as well as citizens.

continued next page...



BICYCLES CONTINUED

BIKES PROVIDE **SPEED** WHICH BOOSTS **ENERGY** LEVELS

Speed when traveling – is one of the most valued commodities of our present society. In fact, speed is so important that we find ourselves compelled to use various sources of energy in mobility which result in high carbon emissions and actually increase health risks. Airplanes, cars, ships, leisure boating and similar modes of transport emit stressful emissions on our planet – and often we find ourselves tired after their use.

Certainly biking is FUN. This presents an energy source that produces speed, fun, health benefits, - and

transportation. It's the most basic, efficient, clean energy available, and produces no unclean emissions to further global warming.

BICYCLES – THE POTENTIAL IS LIMITLESS.

Bike clubs abound all over Canada, for a myriad of purposes both practical, and, wouldn't you know it, sheer enjoyment! There are Bike clubs offering long-distance multi-use recreation trails and clubs offering family oriented day and week-end trips. There's clubs for singles and clubs which arrange bike tours throughout Europe. These trips are almost anywhere imaginable.

Riding a bike provides the speed that boosts energy levels. In a society plagued with chronic illness and obesity, biking provides a great exercise solution. The Mayo Clinic outlines 7 benefits of exercise; (1) mood improvement, (2) combats chronic diseases, (3) manages weight, (4) promotes sleep (WOW), (5) energizes sex life (6) boosts energy and (7) is fun.

Does this almost makes you want to run out and get that bike or join a club before you finish the article? – but WAIT!, there's MORE!

With all this fun you might forget that you are playing an active role in moving toward a safer, cleaner environment – which is what we all want when biking.

Children can renew their own energy through biking AND improve the environment.

Canada annually hosts the National Commuter Challenge. One can't help but be amazed at the concept. Traveling by car is the single largest source of greenhouse gas (GHG) emissions in Manitoba, and quite probably in the nation. Half of children in Canada are driven to and from school each day, this kind of driving, when walking is the option, causes damage to our global environment and to the health of children. The Commuter Challenge was launched nationally by Sustainable Alberta Association in 2000 and serves to raise awareness and provide a

practical way to increase clean energy. This competition showcases commuters deciding to use sustainable modes of transportation. One day a year, many participates bike, walk, or skate to school or work. That's Incredible.

NO BIKE? NO PROBLEM!

This environmentally friendly mode of transportation option offers new ways to travel and explore. For quite some time this has been popular in European cities. For example, Barcelona Biking in Spain, offers rental bikes for a guided tour around the city. Bike rentals are extremely popular in Munich, where miles of green paths in and around the city makes for a "cyclist's paradise."

VELIB Bike Rentals in Paris have been particularly popular with visitors as well as citizens. Prices, and system of use varies among the cities. In 2008 SmartBike DC in Washington DC jumped into the fray as a new way to traverse the city. This self-service bicycle rental allows you to swipe a card and release a bike for a small annual membership fee.

Montreal has developed it's own bike rental system, fashioned after Velib in Paris, with bikes which boast better construction which enhances safety and discourages loss. Bike rentals is a municipal venture in Montreal with government getting involved. Toronto and Vancouver have private bike rentals agencies for touring the cities.

PLEASE DON'T FORGET!

Jamming a bike into an already small and crowded dwelling is just begging injury. However, most of the rental programs include storage, allowing the

rider to pick up a bike at one kiosk and desposit it at another.

Bicycling for the daily commute or touring in cities is not for the "faint of heart". Safety must remain an utmost consideration.

Effective bike lanes are essential to reduce accidents with vehicles, and to promote participation (and thereby taking more vehicles off the road).

Again we can look to our European friends as an excellent example of this safety measure. Bike lanes in Europe are so common that you hardly notice a lack of them. Roads have been widened to accommodate bikers and, impressively, materials to build bike lanes vary from that of the roads and the pedestrian paths.

IT'S LIKE FOLLOWING THE "YELLOW BRICK ROAD"!

Canadian cities are also moving towards effective development of safe bike lanes both to cut down on damaging vehicle emissions and increase bicycle use. The Toronto Bikeway Network has project plans to build a 1000+ Bikeway Network by 2012, 500km of which are bicycle lanes.

Ontario's "Share The Road Cycling Coalition", a cycling advocacy organization, is working in partnership with other stakeholders to build a Bicycle Friendly Ontario. They hope to develop public policy which is similar to the legislative programming existing, most notably in the Canadian provinces of Quebec and British Columbia. Vancouver's Bicycle Network has doubled in the last 10 years and has cycling becoming

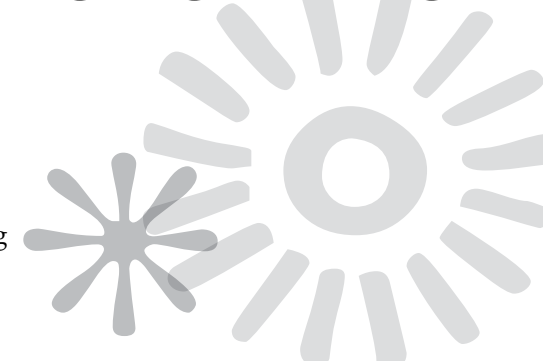
the fastest-growing type of travel in Vancouver, both for transportation and leisure.

So, the way clearly stretches out before us. Bicycling is a burgeoning mode of transportation across the globe. Biking is incredibly environmentally friendly and it's efficient.

It's time we take stock and become cognizant of the environment we leave for our children, our future and the environment.

Grab the challenge, Seize the day...
Renew your own RENEWABLE ENERGY!!

BICYCLES RELIEVE **CO2** EMISSIONS FROM TRANSIT SYSTEMS





ecoENERGY RETROFIT HOMES PROGRAM

Take advantage of the ecoENERGY Retrofit grant to make your home more energy efficient and help you save money. To qualify, follow these steps:

Hire a Natural Resources Canada certified energy advisor to perform an energy evaluation of your home. The advisor will give you a pre-retrofit evaluation report and an EnerGuide rating label for your home.

More information at this website:
<http://www.oeec.nrcan.gc.ca/english/index.cfm>

On January 21, 2007, the Honourable Gary Lunn, former Minister of Natural Resources, announced a \$220-million ecoENERGY Retrofit program which was launched on April 1, 2007. ecoENERGY Retrofit offers incentives for energy efficiency improvements in homes.

SELECT YOUR IMPROVEMENTS and implement the recommended energy upgrades, leaving time to ensure your post-retrofit evaluation is completed within 18 months or before March 31, 2011, (whichever comes first and subject to available funding).

CALL YOUR ENERGY ADVISOR to perform your post-retrofit evaluation, to confirm your new energy rating and to submit your grant application. Wait 90 days from the date of your post-retrofit evaluation to receive your cheque.

<http://www.oeec.nrcan.gc.ca/english/index.cfm>

THIS PROGRAM IS DESIGNED TO HELP HOMEOWNERS and owners of existing low-rise properties make smart energy retrofit decisions that will result in significant energy savings and a cleaner environment. The first step in participating in the ecoENERGY Retrofit – Homes program is to call for a professional energy assessment provided by an energy advisor certified by Natural Resources Canada (NRCan). The advisor will perform a pre-retrofit assessment of the home and provide you with your own personalized action checklist of upgrades that will reduce your energy consumption.

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CONSUMER ENERGY EFFICIENCY IN THE HOME

RIGHT IN YOUR OWN HOME, YOU HAVE THE POWER TO REDUCE ENERGY DEMAND. THAT MEANS YOU CREATE LESS GREENHOUSE GAS EMISSIONS, WHICH KEEPS AIR CLEANER FOR ALL OF US... AND SAVES ON YOUR UTILITY BILLS!

Considerable effort has gone into reducing energy consumption by appliances, but changes in lifestyle have offset a large part of this. Office equipment is responsible for up to 40 % of the electricity consumed in every building. This sector, which includes outdoor lighting, is growing as is its demand for energy.

Labelling of Domestic Appliances and the Regulation on the Energy Efficiency Labelling Programme for Office Equipment is aimed at overcoming non technological market barriers for energy efficient products in the residential and tertiary sectors. This means using the best technologies for consuming less energy, while guaranteeing or even improving end-user comfort levels. Install a programmable thermostat to keep your house comfortably warm in the winter and comfortably cool in the summer.

- **Use compact fluorescent light bulbs with the ENERGY STAR® label.**

- **Air dry dishes instead of using your dishwasher's drying cycle.**
- **Turn off your computer and monitor when not in use.**
- **Plug home electronics, such as TVs and DVD players, into power strips; turn the power strips off when the equipment is not in use (TVs and DVDs in standby mode still use several watts of power).**
- **Lower the thermostat on your hot water heater to 120°F.**
- **Take short showers instead of baths.**
- **Wash only full loads of dishes and clothes.**
- **Drive sensibly. Aggressive driving (speeding, rapid acceleration and braking) wastes gasoline.**

Energy-efficient improvements not only make your home more comfortable, they can yield long-term financial rewards.

Reduced utility bills more than make up for the higher price of energy-efficient appliances and improvements over their lifetimes.

In addition, your home could bring in a higher price when you sell. Appliances account for about 17% of your household's energy consumption, with refrigerators, clothes washers, and clothes dryers at the top of the consumption list. When you're shopping for appliances, think of two price tags. The first one covers the purchase price—think of it as a down payment. The second price tag is the cost of operating the appliance during its lifetime. You'll be paying on that second price tag every month with your utility bill for the next 10 to 20 years, depending on the appliance. Refrigerators last an average of 14 years; clothes washers about 11 years; dishwashers about 10 years; and room air conditioners last 9 years.

When you do shop for a new appliance, look for the ENERGY STAR label. ENERGY STAR products usually exceed minimum standards by a substantial amount. To help you figure out whether an appliance is energy efficient, the government requires most appliances to display the bright

yellow and black Energy Guide label. Although these labels will not tell you which appliance is the most efficient, they will tell you the annual energy consumption and operating cost for each appliance so you can compare them yourself.

DISHWASHERS

Most of the energy used by a dishwasher is for water heating. The Energy Guide label estimates how much power is needed per year to run the appliance and to heat the water based on the yearly cost of natural gas and electric water heating

BENEFITS OF WORKING FROM HOME

Working from home saves energy and time by cutting out the commute, but it may increase your home energy bills a lot unless you use energy-saving office equipment.

ENERGY STAR labeled office equipment is widely available: it provides users with dramatic savings, as much as 90% savings for some products. Overall, ENERGY STAR labeled office products use about half the electricity of standard equipment. Along with saving energy directly, this equipment can reduce air conditioning loads, noise from fans and transformers, and electromagnetic field emissions from monitors.

HOME OFFICE TIPS

- **Selecting energy-efficient office equipment—personal computers (PCs), monitors, copiers, printers, and fax machines—and turning off Home Office and Home Electronics machines when they are not in use can result in enormous energy savings.**

- **An ENERGY STAR labeled computer uses 70% less electricity than computers without this designation. If left inactive, ENERGY STAR labeled desktop computers enter a sleep mode and use 4**

watts or less. Spending a large portion of time in low-power mode not only saves energy, but helps equipment run cooler and last longer.

- **To maximize savings with a laptop, put the AC adapter on a power strip that can be turned off (or will turn off automatically); the transformer in the AC adapter draws power continuously, even when the laptop is not plugged into the adapter.**

- **Common misconceptions sometimes account for the failure to turn off equipment. Many people believe that equipment lasts longer if it is never turned off. This incorrect perception carries over from the days of older mainframe computers.**

- **Studies have shown that using rechargeable batteries for products like cordless phones and PDAs is more cost effective than throwaway batteries. If you must use throwaways, check with your trash removal company about safe disposal options.**



Millions of Canadian \$\$\$ for Smart Energy Projects

CANADA

CANADA AND ALBERTA GOVERNMENTS INVEST IN MAJOR CARBON CAPTURE AND STORAGE PROJECT

THE GOVERNMENTS OF CANADA AND ALBERTA are investing more than \$850 million in clean energy technologies that will dramatically reduce greenhouse gas emissions and generate high-quality jobs for Canadians. The Honourable Lisa Raitt, Minister of Natural Resources, and the Honourable Mel Knight, Alberta Energy Minister, announced the funding which will support the development of a large-scale carbon capture and storage (CCS) project in Alberta.

“The most viable emission-reducing technology for fossil fuels is carbon capture and storage,” said Minister Raitt. “The Government of Canada is backing up our support for carbon capture and storage with substantial investments. These projects will reduce greenhouse gas emissions while creating high-quality jobs for Canadians now and benefiting our environment for future generations.”

“A key goal of Alberta’s provincial energy strategy is to achieve clean energy production through leadership of technology development,” said Alberta Energy Minister Mel Knight. “Commercial scale projects such as this will not only reduce greenhouse gas emissions in Canada but advance technology that can be used around the world.”

A TOTAL OF \$865 MILLION will be invested by the Governments of Canada and Alberta in the Shell Quest project, a joint venture among Shell Canada (60 percent), Chevron Canada Limited (20 percent) and Marathon Oil Sands L.P. (20 percent). This project will integrate CCS technology at Shell Canada’s Scotford oil sands upgrader, near Edmonton. The application of carbon capture and storage technology could capture up to 1.1 megatonnes of greenhouse gas emissions annually, a reduction of about 40 percent.

“The Government of Alberta and Government of Canada should be commended for their leadership and vision on advancing deployment of CCS,” said Graham Bojé, VP, HSSE & Sustainable Development, Shell Canada.

“FINDING WAYS TO REDUCE GREENHOUSE GAS EMISSIONS is one of the most important challenges facing society, and developing substantial CCS capability with governments and key stakeholders is one of our greatest priorities.”

According to the Canada–Alberta ecoENERGY CCS Task Force report, CCS technology could allow Canada to cut its greenhouse gas emissions by as much as 600 million tonnes a year by 2050 — an amount equal to almost three-quarters of Canada’s current annual emissions.

CLEAN ENERGY FUND

The Government of Canada’s investment comes from the Clean Energy Fund, a \$1-billion program over five years, as part of Canada’s Economic Action Plan, to advance Canada’s leadership on clean energy technologies and reduce greenhouse gas emissions from energy production.

SUCCESSFUL PROJECTS may expect to receive Community funds covering up to 75% of their eligible costs. Hardware-type investments and research and development projects are not supported under this scheme.

<http://oee.nrcan.gc.ca/>

clean energy fund program

Clean energy is energy that is produced, transmitted, distributed and used with low or zero greenhouse gas (GHG) and other air emissions. The Government of Canada has committed that Canada’s total GHG emissions be reduced by 20 percent from 2006 levels by 2020 and that 90 percent of Canada’s electricity be provided by non-emitting sources such as hydro, nuclear, clean coal and wind power by 2020.

In support of these goals, the Clean Energy Fund provides \$850 million over five years for the demonstration of promising technologies, including large-scale carbon capture and storage (CCS) projects, and renewable energy and clean energy systems demonstrations. It also provides \$150 million over five years for clean energy research and development (R&D).

The Arctic and What's Happening

The Arctic has been a focus of great interest and concern regarding the profound effect of Climate Change. In an encouraging vein, The ARCTIC ENERGY ALLIANCE (AEA) Has been in place to help communities, consumers, producers, regulators and policymakers to work together to reduce the costs and environmental impacts of energy and utility services in the north. Their goal, among many, is to educate members of society to understand the impacts on the environment of their energy use, and to reduce energy costs. They will provide services that cover all energy sectors. The initiatives of the AEA are impressive and broad.

Community Energy Planning is part of AEA. The objectives of a CEP includes keeping more money in the community, reduction of pollution to improve public health and help reduce green house gas emissions that cause climate change. CEP requires a community to come together to review how energy

is used in their community, evaluate potential projects and partnerships, put projects into an action plan, complete projects and monitor how they're working and review how energy is used in the community after the projects are in place. The AEA will help with proposal writing, project management, workshop facilitation, community energy profiles and the identification and evaluation of energy options

On an exciting note, the AEA showcases Energy Action Award Winners annually. All are noteworthy, three of which are highlighted below.

Youth/Schools Category

In early 2009, the Arctic Energy Alliance teamed up with the Aurora College Pre-Apprentice class in Inuvik to run a pilot Winterization program. Students received hands-on training as they winterized 10 elders' homes with window plastic, caulking, weather stripping, programmable thermostats, low-flow shower heads and more.

Community Category

The City of Yellowknife is one of the few cities in all of Canada to have taken serious steps to implement a Community Energy Plan. Their actions have included one of the most efficient building codes in Canada, reduction of greenhouse emissions by installations of wood pellet boilers and the conduction of energy audits on all facilities.

<http://www.aea.nt.ca/missiongoals.aspx>
http://www/aea.nt.ca/nta_ind.aspx

MANY STRONG VOICES

TURNING VULNERABILITY INTO STRENGTH (MSV)

WHAT IS MSV?

An alliance of Indigenous Peoples Organisations, NGOs, Researchers, Policymakers, Community Organisations and

others in over 20 Arctic and SIDS (Small Island Developing States) states.

WHAT DOES MSV DO?

- (1) Builds capacity and alliances in the Arctic and SIDS to support the voices of people in these regions in international processes dealing with climate change.
- (2) Raises awareness about the effects of climate change on vulnerable regions in general and on the Arctic and SIDS in particular.
- (3) Works to understand regional needs and generate practical mitigation and adaptation solutions through innovative community-based research and knowledge exchange.

CLIMATE CHANGE PRESENTS THE HUMAN RACE WITH PROFOUND CHOICES

that go beyond the current debate over new technologies, economic, and social costs and even concerns over environmental impacts. UN Secretary General Ban Ki-moon has called climate change the "moral imperative and the defining issue of our era."

Increasingly, climate change is being viewed as an ethical issue and a matter of justice. And, said the Secretary General, "*We have an ethical obligation to right this injustice. We have a duty to protect the most vulnerable.*"

THE GOAL OF MANY STRONG VOICES

The goal of Many Strong Voices is to promote the well-being, security, and sustainability of coastal communities in the Arctic and Small Island Developing States (SIDS) by bringing these regions together to take action on climate change mitigation and adaptation, and to tell their stories to the world.

The Arctic and SIDS are barometers of global environmental change. They are considered critical testing grounds for the ideas and programmes that will strengthen the adaptive capacities of human societies confronting climate change. Lessons learned through MSV will support policy development at local, regional, and international levels. They will provide decision-makers in the two regions with the knowledge to safeguard and strengthen vulnerable social, economic, and natural systems.

<http://www.grida.no/>

news on energy from around the world

ROCKET STOVE USES 70% LESS FIRE WOOD

IN SOUTH EAST ASIA a project team has developed a locally adapted rocket stove for cooking that could dramatically reduce the use of raw materials. The project also provides a training programme that includes videos, a manual and even construction moulds to ensure that the stove can be used properly. The rocket stove uses 70% less fire wood than an open fire, which makes its development an important breakthrough for Laos and Cambodia where wood is the main energy source. The rocket stoves can be made from local materials such as clay, rice husk, wood and sheet metal)very inexpensively and is very easy to use.

Ms Antje Klauss-Vorreiter
Deutsche Gesellschaft für
Sonnenenergie e.V. Germany
<http://www.reepro.info>

BANGLADESH AND INDONESIA

RENDEV is a 3 years project exploring ways to link microfinance and access to renewable energy. The Rendev project recently received the EU's 2009 Sustainable Energy Award in the cooperation programme category. Currently more than 1.6 billion people lack access to reliable energy sources, particularly in rural areas. The project developed a market-based way to replace kerosene with solar lighting, which included a micro-financing package.

Ms Pascale Geslain
<http://www.rendev.org>

TANZANIA

The TREESPA project in Tanzania, which serves to alleviate poverty, develops energy-efficient business concepts around the best available technology. It is now focusing on lighting, motors and welding machines.

The project primarily aims to help people living in rural settlements where grid supply has recently been provided.

Ms Monica Gullberg
<http://www.treespa.eu>

GLOBAL NON GOVERNMENT ORGANIZATIONS (NGO) are involved in sustainable energy projects. Resources include industry, finance, academia and technology development experts.

INTERNATIONAL SUSTAINABLE ENERGY ORGANIZATION (ISEO) web portal www.uniseo.org serves as global information exchange platform on energy technologies. This platform provides information in areas such as sustainable energy legislation, education, training, infrastructure financing and energy statistics. ISEO is compiling complete world renewable energy mix forecasts for feasible sustainable global energy scenarios and action plans.

In order to fulfill its task efficiently and speedily, ISEO will assist the responsible officials for the establishment of complete energy statistics and develop

an effective energy costing and forecasting methodology. Such assistance is aimed at faster implementation of hydro power, wind power, biomass (solid, liquid, gaseous, energy from waste), geothermal (heat and power), solar (PV, heat, drying, solar architecture, solar air con, solar pumping, sterling systems), ocean Power (OTEC, waves, tidal), clean fuel production, storage and applications (stationary and mobile), heat pumps, co-generation, muscle energy (animal, human, cycling, walking), sustainable transport (road, off-road, rail, water, air), and agriculture. The ISEO will implement efficiency measures (insulation, lighting, vehicles, car pooling, economic drives etc.), education, human behavior and awareness creation.

An investment task force coordinates the financing of local and regional projects by enhancing capital sourcing from all possible investors and lenders like the World Bank Group, GEF and other Funds, Private Sector Banks, Foundations, Donors, Government Subsidies and other Financial Mechanisms.



advertisement



WIND POWER

The most economical source of renewable energy producing electrical energy. Notwithstanding some controversy, 25 wind farms can be located on Google Earth. SURPRISE? REALLY? To be sure, wind energy must be properly channeled to be beneficial.

But this I tell you.

WIND has energy at the most basic level! Any elementary school teacher would be pleased to have doubters visit their schools on a windy day during recess. Wind transforms even the meekest of children into screaming, whirling, helicopters, seemingly out of control, and not coming in for a landing any time soon! However any human exercise begets energy. Well, these little children are certainly exercising every muscle during the dreaded windy recess, whirling into school, back to class with the strength of a level 5 hurricane.

Can this energy be channeled?

Yes, Wonderfully!!!

They're alert, eager and it's time to get out that project that heretofore brought on groans and sleepy heads. Never mind wind farms to explore the energy power of wind. Take a field trip to school – on a Windy Day!!

So, in a serious vein.

We must be greatly optimistic of the power of wind, when properly channeled, it creates electrical energy in an environmentally safe, renewable, productive manner. Gas Powered Leaf Blowers

JUST PUSH IT

Those early anticipated days of spring, longer light hours, warmer weather, green grass – and, yes, the guy next door who just loves to get his gas-powered mower revved up at what seem to be the crack of dawn on your coveted Saturday morning sleep-in. You anticipate it, you know it's inevitable, but, my friend, you're never ready. After all, you wait until at least mid-afternoon to get your gas-powered mower out. Wait, gas-powered, spewing toxic

fumes into YOUR environment.

How about an electric lawn mower?

Still uses electricity, and does pose the problem of tripping over the cord in a moment of distraction. Look, I'm not suggesting you get a goat. But, try something old, that's very, very new.

Modern Push Reel Mowers.

Remember, it's been said, exercise produces energy – it's scientific. These mowers aren't reminiscent of the old push mowers that did have the power to hospitalize.

Do your research, the internet is alive!! Push Reel Mowers are great exercise (and we know what comes from that), are light but rugged, are quiet, non-polluting since they require no gas, and there are no frustrating cords or tune-ups. Different brands of Push Reel Mowers have different great qualities. They all boast sharp blades for up to eight years and besides being light, they are easy to maneuver. Some have wider cutting width, similar to the gas-powered mower. Some (priced accordingly mind you) guarantee golf-course-like lawns. So, get the neighbourhood together.

Create your own corner of well-manicured lawns maintained in an smart energy manner. Chances are, the early morning guy will put his gas-powered mower away.

Well, maybe....

THE ENERGEIA.

THE EDITOR

Judy Mayer-Grieve

I have been privileged to work successfully in the Advertising field and to teach what I have learned to others who are eager to enter this field. Yet, always, my passion is in the fluidity of creating, I have applied my skills as a graphic designer and creative director with a background in illustration, digital media and on occasion copy writing. When time allows, I paint to ground myself. In this flagship magazine, we will expand on all avenues that offer a better way of life. We will provide you with information and resources on what we learn and as we grow. Our Climate change in part due to our Energy choices is affecting every part of our lives. Until now I have often felt helpless as one small individual about how to deal with Climate Change. In this magazine there is opportunity to see what is going on around us, around the world, to become aware and involved in a better future. We're all in this together.

THENERGEIA is a resource on what's happening and how our collective creative changes can improve in the way we live. We will share with you all that we learn in every publication. Knowledge is power and more importantly we can support our children to invest in our future because they will dictate what is to come. We welcome you to contribute and help make a difference as our world is continually changing.

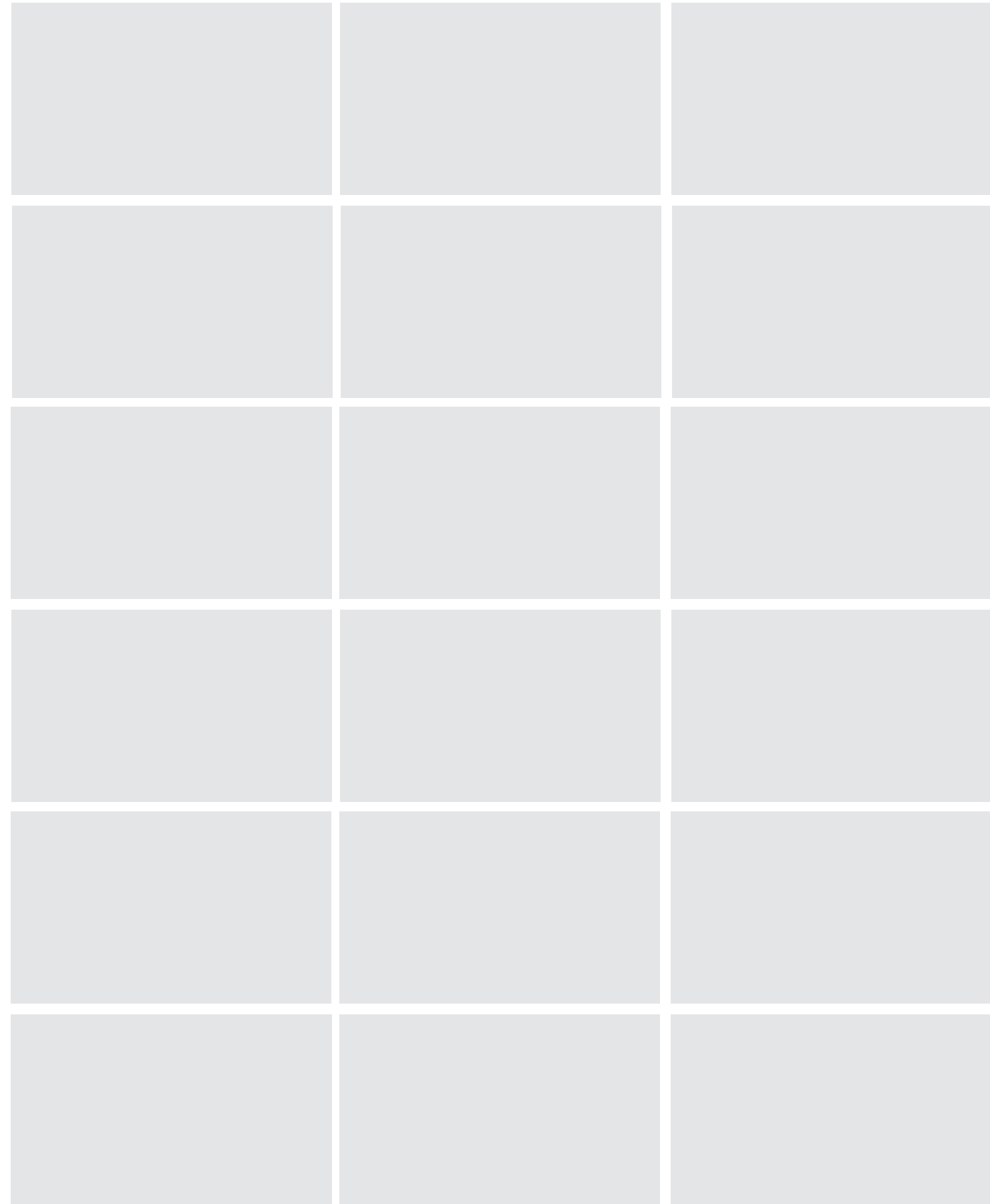
THE ASSOCIATE EDITOR

As writer for many years, in a variety of contexts, my amazement of the power of the written word grows. Using writing to transform thoughts, and opinions as vividly as a master applies paints to the canvas is an exciting challenge for me. I love taking ideas that are hiding right in front of me and giving them life, shape and meaning. In each story, article or poem I write, I strive through my weaving together of words to make a point that is crystal clear; and then my friends, how I love to embellish!! By writing in THENERGEIA I want to challenge all of us to discover, participate

and take ownership of Energy choices that will have a positive affect on our Climate. Don't decide that this all sounds just a little too boring, that you've heard enough about clean energy. True, everything that promotes clean energy in our environment is important. But, let me be clear! The one source of the cleanest, most effective energy I will expound on, over and over in THENERGEIA is energy created by our own behaviour. I will challenge myself and then turn to you to act in ways that will most certainly help promote a clean healthy environment. I promise to rake my own leaves and not hire a gas-powered leaf blower. I promise to walk the 15 minutes to the grocery store for milk rather than use the car so I don't miss the next television show. I promise to leave my car at home in bad weather so I don't add extra unclean emissions into the air by the lengthier travel time. Instead, I will use one of several transit tickets I have on hand for just such an occasion and I promise to bundle up and walk to the bus stop. I promise to enjoy the peace of a canoe or the thrill of a kayak more than loud, unclean speedboats. I PROMISE!! What will your promise be? We'll talk!

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