



**“Then the Grinch thought of something he hadn't before!
 What if Christmas, he thought, doesn't come from a store.
 What if Christmas...perhaps...means a little bit more!”
 Dr. Seuss**

December 2016

For a Better Tomorrow ...

SAGE Meeting. No meeting in December.

SAGE Memberships gratefully accepted (anytime). \$25 by mail or online at sage_environment.org

December 6. **Green Drinks** at the Owl Acoustic Lounge. 4-6 p.m.

SACPA presents: **Pricing Carbon Dioxide: How to Bell the Carbon Cat.** Noon December 1st in the basement of The Keg.

Merry Christmas and a Happy Holiday Season from SAGE

The Government of Alberta is unrolling its Climate Leadership Plan in an effort to meet our collective obligations to provide a livable planet for the future.

To achieve the carbon reduction goals, the government has chosen two implementation tools, including an energy efficiency plan and a carbon levy.

The energy efficiency plan will be designed to deliver incentives and technical support that encourages the installation of energy efficient lighting, water fixtures, heating technologies and heatloss reduction (with better windows and insulation). These services and incentives will be announced in 2017.

The carbon levy will involve an additional cost to the burning of fossil fuels. The polluter-pays principle adds to the current price of fuel the costs of health care, the loss of ecosystem services, and risks to future economic productivity. It corrects market signals to the economy and, in principle, will lower the demand for energy-intensive products and services.

The carbon levy provides a predictable energy cost, but not a predictable emission reduction. The levy must be adjusted over time to achieve the emission reduction goals.

The province expects to raise almost \$10 billion over

the next five years. This money will be reinvested into large-scale renewable energy projects and green infrastructure. Roughly one-third of the money will be directed to assist vulnerable families and communities, as well as small businesses.

The province has targeted the replacement of coal-fired electricity generation with 30% renewable energy (wind and solar) by 2030, and the remainder will be replaced with natural gas generation. This is aligned with the federal government's recent announcement to phase out coal power by 2030. A 6.8 cent / kWh price cap on electricity will help prevent gouging during the transition.

Materials Recycling Facility: Part of the Plan

At the Council meeting on Monday, November 28th, eight of the nine council members voted to move forward with curbside recycling as a component of the Capital Improvement Program (CIP).

The Capital Improvement Program is a plan that identifies capital projects required by the municipality, includ-

ing timelines and a plan for financing. The City of Lethbridge is currently in the process of planning for its next CIP which will involve projects over the 2018-2027 period.

As a major component of the waste management plan, a materials recycling facility (MRF) will be constructed. A MRF is typically designed to sort materials from the waste stream and

prepare them to be shipped as a feedstock for manufacturing. Cardboard, paper, plastics, metals and glass are diverted from the landfill and used to make new products.

In the future, compostable materials may also be diverted from the landfill and used as a soil amendment. Compostable waste in the landfill is a significant

source of greenhouse gas emissions in North America.

The forward thinking waste management plan will extend the life of our landfill, reduce air pollution, preserve the natural environment and close the materials cycle while conserving natural resources.

For more about our waste, visit: wasteless.ca

Father Christmas and Mother Earth

So, the last page is open on the calendar and the landfill begins to rub its great belly awaiting the coming waste-feast of the holiday season. Father Christmas, with a twinkle in his eye, prepares to spread plastic and packaging and cardboard far and wide. But Mother Earth is not so jiggly with Nick's footprint, so she offers some alternatives to make it a little lighter:

If you plan to travel, considering riding a reindeer rather than taking the car.

Turn down the thermostat before you begin to cook and gather. And play Twister to keep the room warm.

Use real dishes, and take turns doing the never-ending dishwashing.

Lose the lights - make a wreath. Or replace them with LEDs which use about one-tenth of the energy. And turn them off when no-one is awake to see them.

Refuse the packaging - buy chips in bulk. Or choose products with packaging that can be recycled.

Eat less meat - ever heard of 'tofurkey'? It even has its own website at www.tofurky.com. Make Boxing Day all vegetarian. Here are some ideas: www.bbcgoodfood.com/recipes/collection/vegetarian-christmas.

And you can still use a real tree. Most store-bought trees are grown in plantations and many researchers suggest plastic trees have a worse life-cycle impact: (earth911.com/home-garden/real-vs-artificial-christmas-trees). Take advantage of the City's tree-pick-up program.

But most of all keep it simple, and find joy in the company of your family, friends, and even the neighbour who doesn't compost or recycle.

Interesting Links:

Planting Healthy Air <http://environment-ecology.com/>

Living Planet Report 2016 http://wwf.panda.org/about_our_earth/all_publications/lpr_2016/

Origin of Major Human Infections Diseases <https://www.ncbi.nlm.nih.gov/books/NBK114494/>

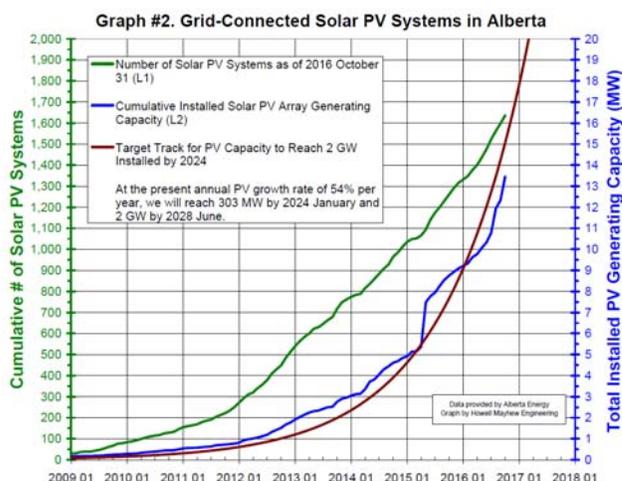


Solar Photovoltaic Growth in Alberta

Alberta currently has 1636 photovoltaic (PV) generating units and 13.4 MW of PV capacity. In the past year, there has been a 30% growth in the number of systems installed and a 54% increase in total capacity. [Data and graph from Howell Mayhew Engineering]

At a current installed cost of about \$3000 per kilowatt, photovoltaic (PV) panels have become a cost-effective option over the useful life of the system. Each kilowatt of installed capacity will produce about 1500 kWh of electricity each year. The average home uses about 7200 kWh per year - with lots of opportunity to reduce electricity use before installing a PV system.

In addition, the system will generate lower emission electricity (compared to Alberta's coal- and natural gas-fired power mix). Many home financing corporations now allow PV systems to be included as part of the mortgage.



Southern Alberta Group for the Environment (SAGE)

A Leading Voice for a Healthy and Environmentally Sustainable Community.

Visit us at: <http://sage-environment.org/>

If you are interesting in getting involved, contact us at:

sage-communications@sage-environment.org

A New Green History of the World:

The environment and the collapse of great civilizations.

Clive Ponting offers a sprawling history of the world from an environmental perspective. But don't let the size of the book deter you - it is an engrossing read.

He begins the work with a 20-page description covering roughly two-million years of human survival. The subsequent 1% of human existence on the planet takes the remaining 400 pages. Ponting makes his point of departure the end of the last ice age and the beginning of agriculture - what he calls the 'first great transition.' The transition he describes is surplus food production through the domestication of plants and animals. The food surplus allowed for a percentage of the population to pursue other activities like art, governance, and war. Food surplus allowed for urbanization and a growth in population.

The fixed aspect of agriculture and urbanization led to greater demands from nearby water supplies and fertile soil. Ponting provides cautionary tales of the collapse of early civilizations due to environmental deterioration. He also suggests that the First Great Transition was truly a transition from human subsistence as hunters and gatherers to a dependence on agriculture and the governance required to protect land and distribute food with the consequent growth of bureaucracies. Ponting implies that it was an irreversible transition as the environment became too damaged to support large populations as hunters and gatherers.

The next stage of human existence the author calls 'the long struggle.' The spiral of population growth and the growing demand for fertile land and fresh water to grow food represents

human existence until very recently. Ponting describes the rise and fall of populations due to available food and the impacts of disease.

Interestingly, many of our major diseases originated in other species and jumped to the human population due to the domestication of animals. "Many of the common human diseases are close relatives of animal diseases. Smallpox is very similar to cowpox and measles is related to rinderpest (another cattle disease) and canine distemper. Tuberculosis originated in cattle as did diphtheria. Influenza is common to humans, pigs and birds and the common cold came from the horse. Leprosy came from the water buffalo. The result is that after living for almost ten thousand years in close proximity with animals, humans now share sixty-five diseases with dogs, fifty with cattle, forty-six with sheep and goats, forty-two with pigs, thirty-five with horses and twenty-six with poultry" (p.200). According to Ponting evidence indicates that hunters and gatherers were considerably healthier than humankind during this period.

Ponting continues his green history with a long and thorough description of our growing debasement of the environment: deforestation, mining, the fur trade, whaling, overfishing, and the salination and desertification of fertile land are all covered in gory detail. "The United Nations Environment Programme estimates that since 1945 human activities have degraded two billion hectares of land, of which 430 million hectares have been irreversibly



destroyed" (p.253).

What I thought was one of the strongest aspects of Ponting's *A New Green History of the World* was his ability to connect human institutions and ways of thought to our collective impact on the environment upon which we rely for existence. He does not shrink from assessing economic systems and the resulting inequalities of access to sufficient food and clean water.

The Second Great Transition, according to Ponting, has been our exploitation of fossil energy to support ever growing populations of people (with fertilizers, pesticides, and farm machinery) with ever-growing levels of consumption (with industrialization and automation, etc.). Like the first great transition, the second appears irreversible as we rely on fossil energy to augment a diminishing and polluted natural environment.

He concludes: "The problem for all human societies has been to find a way of extracting from the environment their food, clothing, shelter and

other goods in a way that does not render it incapable of supporting them" (p.423). The challenge, of course, will be to recognize the point at which this will no longer be possible, and to find the economic and social means to respond to achieve some level of sustainability.

Ponting reminds us that: "Some societies have succeeded in finding the right balance, some have failed."

