“A Sad Sort of Clean” Questions

1. What do you think is meant by the title of this exhibit: “A Sad Sort of Clean”?

2. Why do you think the photographer has chosen to include both nature landscape photos, and portraits?

3. From these photos and their captions, what are the environmental and social impacts of hydroelectricity?

4. Which photo has the most impact on you and why?

5. Which quote has the most impact on you and why?

6. Why does this exhibit call into question Manitoba Hydro’s claim of being a provider of “clean” energy?

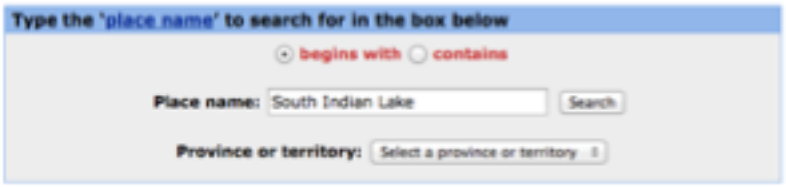
Hydro-Affected Communities

StatsCan Group Research Assignment

Pick one of the communities featured in The Other End of the Line:

South Indian Lake
Grand Rapids
Nelson House
Split Lake

Enter the name of the community into the 2006 Census Community Profile - http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E



Data to find on the Census Profile

2006 Census Data	_____	Canada
Population		31,612,897
% Population Change from 2001-2006		+ 5.4%
Median Age of the Population		38.8
Average Number of Persons in Private Household		2.5
Top two languages most often spoken at home		English & French
Median Income for all Families		$41,401
% of Total Population Over 15 with No Certificate, Diploma or Degree (didn't graduate from high school)		11.6%
Unemployment %		6.6%

Make a poster of your communities statistics. Compare with the other groups findings.

From megawatt to 'negawatt'

Energy conservation is Manitoba Hydro's cheapest resource

By: **Will Braun** (adapted and shortened for this Lesson Plan)

Keeyask, a 695-megawatt generating station at Gull Rapids on the lower Nelson River, is next up on Manitoba Hydro's construction plan.

Former NDP energy minister Tim Sale made a solid case (Hydro needs a new vision, Jan. 19) that Manitoba Hydro's singular focus on new dams is a path, not to a bright future, but back to the past.
That case is strengthened by an examination of a basic assumption that drives Hydro's plans to build the $6.2-billion Keeyask dam and the $10.2-billion Conawapa.

The assumption is **energy demand in Manitoba will always continue to grow.**

Currently, Hydro expects energy use in the province to grow by 1.6 per cent -- about 80 megawatts -- annually. But if Hydro dropped the assumption and expanded its Power Smart program to the point of cutting energy demand by 1.6 per cent every year, then the risky dams would not be needed.

It is worth clarifying that the stated purpose of the dams is not export but meeting future Manitoba energy demand. Exports of extra power would play a role in paying for the dams during the period until Manitoba's demand would catch up with their output, but ultimately, if we Manitobans didn't need them, they wouldn't be built.

But how realistic is it to save as much power -- by means of better fridges, better insulation, geothermal heat pumps and the like -- as the dams would produce? And how much might such efficiency measures cost compared to new dams?

In the electricity world, energy that is conserved acts as a resource. 'A megawatt saved is a "negawatt" produced,' as some energy gurus like to say. A negawatt has value -- it can be exported or used to put off new generation development.

If a utility needs 80 MW to meet estimated demand growth, it can build an 80-MW dam or save 80 MW. Either way, the lights stay on.
And that is the purpose of Manitoba Hydro -- to keep the lights on at the lowest financial and environmental cost.

Back to the question then: Could conservation measures keep our lights burning without new dams, and would it be cost-effective?
Hydro's Power Smart programs cost 1.9 cents per kilowatt hour saved (or

produced, if you will), while Keeyask would come in at around 10 cents per kilowatt produced.

To be fair, in addition to the 1.9 cents Hydro spends on Power Smart programs, consumers put in about as much of their own money for insulation, geothermal systems or similar expenses. With that, let's say the overall cost to consumers of conservation programs is then double the 1.9 cents, or 3.8 cents. That is still far below the cost of Keeyask's 10 cents per kilowatt produced.

Looking back, Hydro has spent about $400 million on a wide range of programs to reduce electricity use in the province since 1989. The achieved savings are 557 MW, which has won them a number of awards. (Notice the difference between 557 MW for $400 million and Keeyask's 695 MW for $6.2 billion).

Over the next 15 years, Hydro plans to spend only $388 million on conservation, compared to $16.4 billion -- 40 times as much -- on Keeyask and Conawapa. It plans to produce 2,180 MW from new dams and only 174 MW through conservation.

The kicker, if one is needed, is that conservation measures bring advantages beyond cost savings. Unlike dams, they do not require a decade to license and build. They can be introduced gradually, with no single multi-billion-dollar commitments. In most cases, they require no expensive environmental hearings & consultation. They are not at risk if there's a drought. They require no transmission lines. All this reduces risk dramatically.

Plus, according to Philip Dunsky, an energy efficiency consultant from Montreal, numerous studies show efficiency programs create more jobs per million dollars invested than building new generation facilities.

And they do not require Hydro to pour cement into rivers or bulldoze transmission corridors through forests.

Could energy conservation measures keep the lights on at a lower cost and risk to Manitobans than Hydro's northern expansion plan?

Hydro's assumption of endless demand growth is a backward-focused, self-fulfilling prophecy. If it rests on that assumption, what will it do once all the rivers are dammed and the landscaped is filled up with wind turbines and transmission lines? At some point, we will need to slow the demand for energy. The sooner, the better.

Ultimately, the future lies in conserving energy. We as a province can either lead, or follow, quite possibly dragging $16 billion worth of concrete behind us.

Will Braun is the energy justice co-ordinator for the Interchurch Council on Hydropower

Don’t be Flippant - Light Switch Cover DIY Activity

This DIY project will help students remember to think about energy conservation, as well as the rivers, lakes, shorelines, wildlife, and people of the north.

Materials Needed:

- Light switch covers or outlet covers
- Magazines (National Geographic, Canadian Geographic, etc)
- Scissors or Exacto-Knife
- White Glue & equivalent amount of water
- Small water colour paint brushes
- Cutting Board or Mat or Cardboard

Step 1

Students, with permission and help from their parents, remove a light switch cover from home. This could be their bedroom switch cover.

Step 2

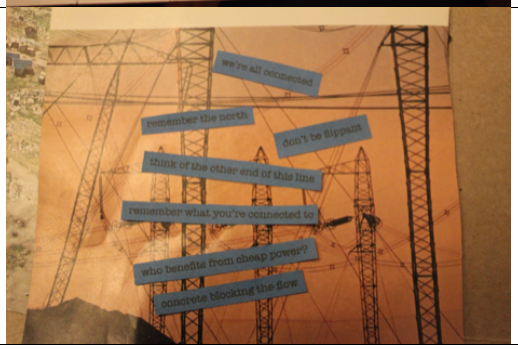
Students look through magazines (National Geographic is a good one) for pictures relating to Hydro, the North, or Water. Magazine cut-outs work better than computer print-outs because of the paper quality.

Step 3

If you want to include text, such as:

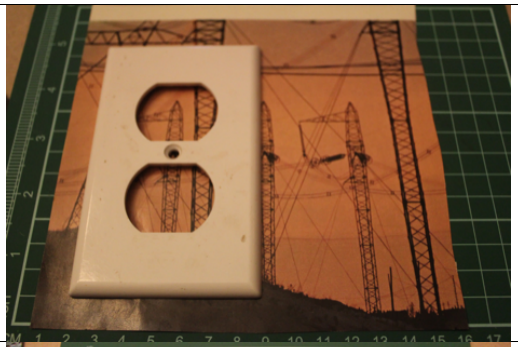
- Don’t be flippant!
- We’re all connected
- Think of the Other End of This Line
- Remember the North
- Etc

Print them, and cut them out.



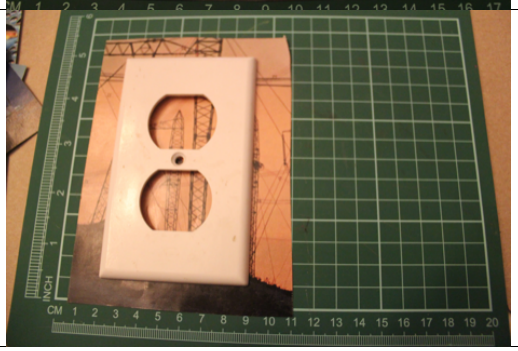
Step 4

Place the switch or outlet cover on the image you've chosen. Allow for approximately 1/2" of extra picture around the edge of the switch cover.



Step 5

Cut the image to size.

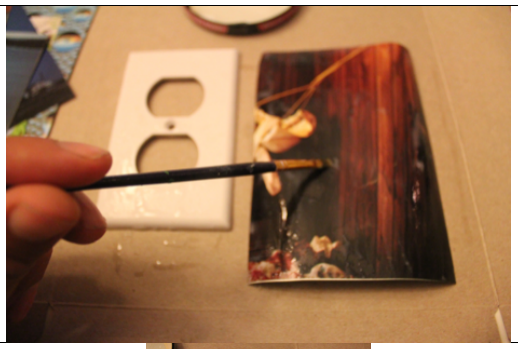


Step 6

Make your "Modge Podge" by mixing equal parts white glue and water. The easiest way of doing this is emptying a white glue container into a cup or jar, and then filling the empty container with water and adding it. Shake vigorously if you have a lid, or stir if you don't.

Step 7

Using the paint brush, apply a thin layer of glue on the front of the cover and the back of the image.



Step 8

Centre the outlet cover on the back of the image.

Step 9

Apply glue to approximately 1/2” around the edge of the back of the cover.

Step 10

Cut an angle off the corners of the image, leaving a 1/8” of image exactly at the corners.

Step 11

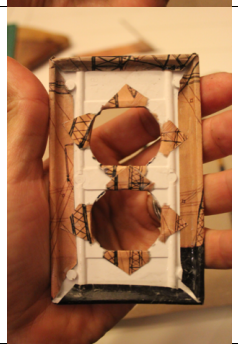
Fold flaps over the edge and press into the back of the cover. Apply extra glue if it doesn’t stick.

Step 12

Using scissors or an exacto-knife, cut an X into the outlet holes.

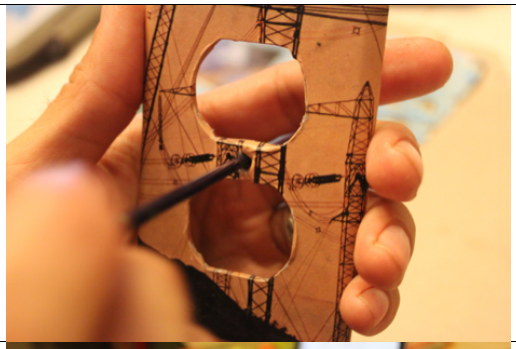
Step 13

Apply glue to the back of the cover around the outlet edges and fold back the inside edges.



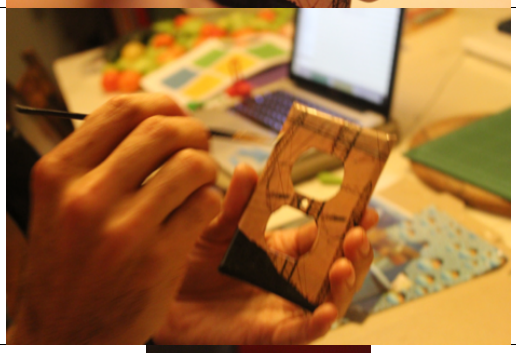
Step 14

From the front of the cover, poke out the screw-hole with the back end of the paint brush.



Step 15

Apply a light layer of glue over the entire cover. If adding text, place it and glue over it.



**This is how it might look if it were a typical light switch cover.

Step 16

Let dry.

Step 17

Screw back onto the light switches or outlets.

This set of lesson plans may be updated from time to time.
Check http://energyjustice.mcc.org