



Pacific Institute
for Climate Solutions
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PICSnews

SUMMER 2012

Message from the Executive Director

Environment *and* economy: no versus required

The summer of 2012 has been a pivotal one for Canada and British Columbia. Nationally, the big development was and is the emerging political spat between BC and Alberta over the Enbridge Northern Gateway proposal. Enbridge wants to build a twinned pipeline to send diluted bitumen 1,177 km westward from Bruderheim, Alberta to Kitimat, BC, and a diluent reciprocally eastward to the Edmonton area. The diluent—light hydrocarbons extracted from natural gas fields—is to be imported by tanker mainly from Australia and Qatar, according to Enbridge. The federal environmental review of the pipeline is continuing, with recommendations to be released next year. What those will contain remains an unknown, as does their potential influence on the pro-bitumen-export stance of the Harper government. It is of great interest to note that in BC, the pipeline debate centres on regional environmental concerns, while in Alberta and Ottawa, the dominant phrase is economics.

Environment versus money: is it not ever thus? And at the very same time as this perpetual dichotomy fuels the debate, an unwelcome record has been set. On August 26, the areal extent of Arctic sea-ice reached a minimum that hasn't been witnessed for tens of centuries. The continuing loss of the summer ice has profound physical and socioeconomic consequences for Canada, as well as for planetary climate dynamics.

Let's add some dots into this mix and then connect them. In 2008, BC imposed North America's first legislated broad-spectrum carbon tax. The tax has since seen the cost of releasing CO₂ from the combustion of fossil fuels rise from \$10 per tonne emitted as of 2008 to \$30 per tonne now. The provincial Ministry of Finance is now undertaking a review of the tax, with the results—like the Northern Gateway review—to be released early next year. In June, BC's Minister of the Environment, Terry Lake, released the first comprehensive evaluation of the impact of the carbon tax on fuel use in BC. The report showed some fascinating trends: since the imposition of the tax, fuel consumption both per capita and per unit of GDP have fallen in BC by several per cent, a

result not matched anywhere else in the country. Importantly, over the same time frame, BC's economy grew at a rate higher than the national average.

So, environment versus economy: is the federal position that pits one against the other justified? The answer is a clear no. And it's not just BC's experience with the carbon tax that supports that answer. Last January, the Danish Energy Agency released statistics that show that from 1990 (the Kyoto Protocol base year) to the end of 2011, Denmark's GDP rose 38%, total national energy consumption fell 1%, coal consumption fell 50% and CO₂ emissions fell 25%. Fully 22% of Denmark's energy requirements are now being met from renewable sources, primarily biomass and wind, and wind now provides some 28% of national electricity needs. Environment versus economy? In Denmark, it's environment and economy, a connection that Canada would do well to heed, as BC has done through its carbon tax initiative.

What then is PICS doing to further that connection? Much. For example, amongst the three dozen or so research projects that we now have underway, we are supporting statistical analyses of the impact of the carbon tax on various economic sectors in the province. We'll release the results later this year. On a broader scale we are doing something even more important: we are fostering interdisciplinarity, the approach that 'environment and economy' demands. We're working to increase exchanges of information across scholarly disciplines, as we did at our annual "Road Ahead" forum in June, described elsewhere in this newsletter. PICS graduate fellows, in particular, benefit from exposure to the breadth of ideas that an interdisciplinary research agenda provides. Maintaining a connection between the two seemingly disparate ideals of fiscal and environmental sustainability is not easy, but it is an imperative if this country is to develop prudent policies, connecting the loss of Arctic sea ice with fossil fuel consumption and putting a price on carbon, as BC has so wisely done.

PICS is hosted and led by the University of Victoria in collaboration with the University of British Columbia, Simon Fraser University and the University of Northern British Columbia.

Climate Change Solutions: The Road Ahead

Held on June 13 and 14 in Victoria, the fourth annual PICS forum took the form of a two-day retrospective and planning session. Under the theme 'Climate Change Solutions: The Road Ahead', more than 80 members of the PICS community, including fellows, researchers, and committee members, came together to take stock of the past three years of supported research and to consider the institute's direction for the coming years. Participants engaged in a lively discussion about PICS' achievements to date and how, going forward, to tackle the key challenges of social and political mobilization in the face of a rapidly changing climate.

One of the highlights of the event was a poster display showcasing the research activities and outcomes of all PICS-funded fellows and researchers to date. Following the event, the PICS Program Committee will spend the coming months considering the feedback and recommendations received, and 'the road ahead.'

New fellowships awarded

PICS is pleased to welcome 13 new graduate and two post-doctoral fellows this year at the four collaborating universities, working in a wide range of disciplines from urban studies, geography, and earth sciences to business, engineering, architecture, health sciences, and environmental studies. These new awards bring the total number of current PICS fellows to 32 graduate students and two post-doctoral fellows.

Specific projects tackled by the new fellowship holders include community adaptation to climate change, renewable energy development – both wind and geothermal, cleantech entrepreneurship, sustainable buildings, and natural resource management. More information on these and other current fellowship projects can be found online at <http://pics.uvic.ca/fellowships/graduate/current> and <http://pics.uvic.ca/fellowships/postdoctoral/current>

PICS own Sara Muir Owen receives Al Gore's climate change training

In San Francisco this August, Sara Muir Owen, PICS-UBC Program Coordinator, was amongst 800 volunteers that received training from former US Vice-President Al Gore as part of the Climate Reality Project. The training allows Sara to deliver Gore's free slide presentation on climate change starting Oct. 1. She was one of 115 Canadians nominated to attend the event.

"I learned that Canadians are ready to talk seriously about climate change solutions. Unlike our southern neighbours,

almost everyone in Canada knows that climate change is real and happening. We no longer need to engage in any debate about it, we need instead to start taking action and delivering solutions."

Cape Scott Wind Farm

In March of this year, the province issued the first-ever multi-tenure agreement to Cape Scott Wind Farm, authorizing construction of up to 55 wind turbines near Port Hardy. Once built, the wind farm will be capable of producing up to 99 megawatts of clean energy, enough to meet the annual energy requirements of 100,000 British Columbians. The construction of the wind farm is projected to infuse an estimated \$80 million into the local economy, creating about 150 jobs during construction and commissioning of the project and up to 12 permanent jobs.

Vancouver-based Sea Breeze Power Corp., who developed the project over a number of years, received a payment of \$7 million from IPR-GDF SUEZ for the purchase of phase one of the project, now under construction. Commercial operation is scheduled to begin in 2013.

District energy in Prince George

Two years following city council approval, the Prince George District Energy System (DES) is up and running. The system will be powered by biomass from the Lakeland Mills, with a backup natural gas fired plant. The energy system now supplies heat to the city core, including City Hall, the Coliseum, the Civic Centre, and the Four Seasons pool. It will also be expanded to include the library, the art gallery, and the main RCMP building. Each building is connected to the DES through an energy transfer station that provides heat and hot water for each site. Project Manager Kristy Brown, provided PICS Director, Tom Pedersen, and PICS UNBC Site Coordinator, Kyle Aben, with a tour of the distribution side of the DES just before fully operational in May.

The city points out that the DES will:

- reduce particulate emissions in the city airshed
- permit the city and its customers to meet greenhouse gas reductions goals
- reduce the city's reliance on non-renewable fossil fuels
- help position the city as a leader in bioenergy application
- keep energy related funds in the community
- assist with downtown renewal
- generate non-tax revenue for the city

UNBC has also been using biomass to heat its main campus and

as a result has realized an 85% reduction in greenhouse gas reductions. The north is perfectly situated to take advantage of biomass DES with higher heating demands than other areas of the province and a forestry-based economy.

UNBC to share electric car!

On July 27, 2012 representatives from the City of Prince George, Northern Health, UNBC, and the Regional District of Fraser Fort George joined together to unveil the Nissan Leaf, a 100% electric vehicle that will be shared by the four community partners.

This initiative creates awareness about the benefits and use of electric vehicles in the northern region and demonstrates a commitment to green energy shared by the partner agencies. The annual cost of electricity to operate the Leaf is about \$300, compared to a gasoline vehicle that can cost as much as \$3100 per year to fuel. Maintenance costs are also significantly reduced because the vehicle runs on batteries and no conventional engine oil is used.

"UNBC is excited to have an electric car on the campus of Canada's Green University this fall. We are also delighted to share this car with such valued partners and thank the City of Prince George for initiating and leading this worthwhile collaboration," said UNBC President Dr. George Iwama. PICS-PICS-UNBC Program Coordinator, Kyle Aben, was able to secure the UNBC funding portion through a successful application to the UNBC Green Fund, which provides seed grants for innovative projects that create a more sustainable campus.

PICS engages with the community at SFU Open House 2012

Close to 19,000 people visited the Burnaby Campus during the SFU Open House 2012 on May 26. Several hundred visitors stopped by the PICS booth learning about our research, fellowship, internship and outreach programs. Visitors had the opportunity to check out the Climate Insights 101 "bite size" lessons. They also explored elements of the PICS-SFU outreach program "Energy Conversion, Conservation and Consumption" such as generating electricity from a wind turbine and lighting different kind of bulbs while pedaling a bike.

Raving reviews for PICS-supported GreenTech Exchange series

"Excellent presentation... a wealth of good information...more interesting than I had expected..." These are just some of the comments from the participants of recent GreenTech Exchange (GTEx) Forums supported by PICS-SFU. In July, GLOBE Advisors

Paul Shorthouse and Stephen Wu spoke to an audience of almost 200 on the opportunities in BC's Clean Energy, Building and Transportation sectors, one of the take-home messages emphasizing the prospects in BC for specialized professionals, skilled trades and construction personnel for clean technology projects. The June Forum featured Ted Singh of Embedded Automation, highlighting how information and communication technologies are being deployed to achieve energy conservation and efficiency in buildings.

The next GTEx Forum will be held at SFU Harbour Centre on Sept. 27. Visit greentechexchange.ca for more information.

Fall speaker series kicks off September 19 at UVic

The joint PICS-PCIC seminar series will kick off on Sept. 19 with *Fire in the woods or fire in the boiler?* by Juan Blanco from UBC's Department of Forest Sciences. Dr. Blanco will present the findings of a PICS-supported research project examining the potential for combining wildfire prevention with energy generation for rural communities.

Also at UVic, UBC's Stephen Sheppard will introduce his new book on visualizing climate change with a free, public presentation on Oct. 4.

Stay tuned for more details on these and other events, or visit pics.uvic.ca/events

UBC-SFU lecture series examines water, food and climate change

Starting Sept. 25, PICS UBC and SFU will continue to offer their free, Vancouver-based public lectures featuring faculty members from each university. This year's series will focus on the fundamental topics of food, water and climate change, launching with presentations by Drs. Hannah Wittman and Andrew Riseman on *Food sovereignty models: Feeding the world while cooling the planet* at SFU Harbour Centre.

Also mark your calendars for our next talk on Oct. 24 entitled *Water security: Governance and climate change challenges from a Canadian perspective* by Drs. Diana Allen and Karen Bakker.

When art imitates science

In our efforts to expand awareness about the seriousness of climate change, one of the key challenges is how to reach out beyond the choir, to those audiences who have a limited understanding of, or interest in, the science behind the issues.

Enter artist and UVic visual arts associate professor Paul Walde. A multidisciplinary artist, musician and curator, Walde has produced an eclectic body of work exploring the interconnectedness of human identity, landscape and technology. In the past

decade, Walde's explorations have led to a body of work on the theme of global warming, specifically our role and responsibility related to human-induced climate change.

Walde's first climate-themed work, "*Permafrost*", was conceptualized during a trip to the Yukon in 2003. Alarmed about the implications of a melting permafrost, Walde began work on a piece that would 'preserve' fractions of permafrost—museum style—in perpetuity.

As an artist, Walde provokes thought by highlighting the absurdity of our human activities with nonsensical pieces or double entendres. The original concept for *Permafrost* was to use solar power to preserve the pieces of tundra, for example. And in a more recent work, Walde presents a series of freezer-preserved snow structures, imaging "a time in the future when snowbanks, snowballs and snowfall are all historical cultural artifacts."

For everyone who downloads a PICS white paper or watches a webcast, there are thousands who don't even consider these avenues. Artists like Walde, who might reach people outside of the scientific community, are a great asset when it comes to reaching 'beyond the choir'.

PICS/PCIC "Showcase"

Join us on Sat. Sept. 29 from 11 am to 4 pm as PICS and PCIC showcase their latest initiatives as part of the University of Victoria's 50th Anniversary Festival. Our interactive display in the lobby of UVic's Bob Wright Centre will feature PCIC's new "plan2adapt" tool, the PICS Climate Insights 101 short course series and renewable energy demonstrations by the university's Institute for Integrated Energy Systems (IESVIC).

For more information, visit <http://www.uvic.ca/anniversary/festival/index.php>



Walde's *Permafrost*. See more works at paulwalde.ca

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