



SUMMER 2011

Message from the Executive Director

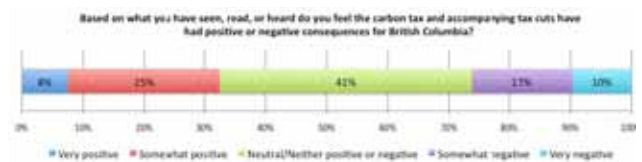
Polls (and poles) apart on carbon tax issues

There has been much recent discussion internationally about the merits and mechanisms of carbon pricing, particularly in light of Prime Minister Julia Gillard's July 10 announcement that Australia will institute a carbon-emissions tax as of July 1, 2012. Carbon pricing has been and continues to be highly controversial "Down Under" having "rent stormy political divisions... for almost a decade", according to *The Economist*. Ms. Gillard is facing those divisions head on, and in doing so appears to have taken cues from British Columbia's carbon-pricing experience. Her plan—which focuses on about 500 of the biggest emitters in the country—includes an initial tax of AUS \$23/tonne of CO₂ released, similar to BC's current \$25/tonne tariff. The rate will rise by 2.5% per year until 2015, when a market-driven emissions-trading system will take effect. Fifty percent of the revenue stream will be directly returned to Australian households via income tax reductions and pension increases, and 40% will be used to support businesses that might be competitively disadvantaged by the tax and farmers who will be encouraged to sequester carbon on their land.

Such steps, while wholly positive from my perspective, have engendered much opprobrium in the Australian parliament and on the street. We have been more fortunate in political acceptance in BC, for reasons which are not entirely clear. Perhaps the fact that 80% of Australia's electricity is produced by burning soon-to-be-taxed coal, while over 90% of our electricity is provided by non-carbon-emitting hydropower is a defining difference. Regardless of the political fallout, PM Gillard is to be saluted for taking such bold steps. Economic modeling suggests that they will yield direct benefits, through creating new jobs in the renewable energy sector while curbing the country's extremely high per-capita CO₂ emissions.

We've now had three full years of carbon taxation in BC, and while some political commentators suggest that this has imposed an unnecessary economic burden on the province, the public

would disagree. In fact, a recent poll by the Pembina Institute, supported by PICS and available at <http://www.pembina.org/pub/2232>, indicates that the majority of residents are in support of carbon taxes and the province's leadership in tackling climate change. The poll shows that 69% of British Columbians are worried about climate change and an equal percentage support applying the carbon tax to all sources of greenhouse gas pollution. More than 70% feel that the carbon tax has either been positive or neutral for the province and that taking action to reduce GHG pollution will help grow, or have little impact on, the provincial economy.



According to a recent poll, almost three-quarters of British Columbians have a positive or neutral perspective of the carbon tax.

We at PICS are delighted to see such a high level of support for the carbon tax. It provides a strong mandate for the province to continue moving ahead in tackling the climate-change challenge, while spurring clean technology development and creating employment. The transition to a green economy that is now underway requires the application of knowledge, be it in engineering or the physical or social sciences. PICS is proud to be part of BC's climate change mitigation and adaptation efforts by supporting excellence in education and research.

In partnership with BC communities, PICS is dealing with the need to adapt to changes that are already upon us: extreme rainfall events, for example, or increasing probabilities of floods in some areas or droughts in others. Across BC, these issues are challenging municipal councils, regional districts and farming communities, and that is why PICS dedicated its annual June forum this year to fostering improved understanding, networking and preparation for such concerns (see www.pics.uvic.ca/resilient_communities.php for more information).

Over the past few months, we have also been proud to host top climate scientist Dr. Thomas Stocker, Co-Chair of Working Group I of the Intergovernmental Panel on Climate Change, and science historian Dr. Naomi Oreskes, co-author of *Merchants of Doubt*, to speak in Victoria and Vancouver. We have supported a number of PICS interns who are working on climate change solutions with provincial government agencies, municipalities and non-profit organizations and, this fall, the PICS community saw the addition of 11 new graduate fellows who are undertaking research in such key areas as renewable energy, cap and trade issues, ecosystem sustainability, community adaptation and transportation options. More information on PICS events and student projects is available at www.pics.uvic.ca/events.php and www.pics.uvic.ca/fellowships.php.

And finally, PICS is pleased to announce the launch this summer of its series of innovative online short courses on the basics of climate science, described in more detail below. Our hope is that these courses will be of value beyond BC. Perhaps they might even play a small role in helping Australians understand why the carbon-pricing initiatives announced this summer by their Prime Minister are so very important.



Climate Insights 101 is now live!

Understanding why climate change is occurring is no longer the domain of scientists. This summer PICS has been proud to launch a first-of-its-kind interactive and animated series of short courses on climate change. "Climate Insights 101" is free, and available to anyone on the planet who has access to the web. The first module in the 101 series (Climate Science Basics) was unveiled by the BC Minister of Environment Terry Lake at the 63rd annual conference of the Institute of Public Administration of Canada (IPAC) in Victoria on 29 August 2011.

The courses were originally designed for the BC public service given that climate change impacts so many areas of policy –such as land-use planning, fisheries conservation



Naomi Oreskes speaks at the University of Victoria in July.

and water-use management, designing storm-water systems, safeguarding the vulnerable during extended heat waves or cold snaps, and advising farmers on crop management under a changing climate.

PICS expects that these courses will be a valuable resource for a wide section of the community beyond the civil service, including science teachers and the media. The science is global. PICS Executive Director Tom Pedersen says that people who don't work in science are often intimidated by it, so these courses will go a long way towards demystifying the physics of the climate change we are seeing. It makes traditionally tough subject matter accessible as well as entertaining.

Module One (Climate Science Basics) provides vivid examples of how the planet is changing, the influences of Mother Nature and humans on the climate system, and what we can expect from climate change in the future.

Check out the courses and the promotional movie trailer at www.pics.uvic.ca/insights. Course highlights are also available on YouTube at "PICSClimateInsights".

Additional modules on adaptation, regional climate impacts and mitigation will launch next year.

New PICS fellows tackle range of climate change solutions

Could bacteria be the low-carbon and renewable energy biofuel for which we are searching? Would more people use public transit if our transport hubs were better designed? And what action should we be taking now to safeguard our forests, marine life and rivers from the impacts of climate change?

These questions are among the projects being tackled by the eleven new PICS graduate fellowships for 2011-2012. Comprising eight PhD and three Masters students, the new fellows will be investigating a range of climate change-related issues from scientific, economic, environmental and social science perspectives. This year's new intake brings an

international flavor to their research with recipients hailing from Canada, India, New Zealand, and the Soviet Union. In addition, 18 PhD students, three Masters students and four post-doctoral fellows have received renewals of existing fellowships. Details of all PICS fellowships past and present are available at www.pics.uvic.ca/fellowships.php.

Total funding for the 36 new or extended fellowships for 2011/12 is \$559,000. PICS fellowships are worth up to \$12,000 a year for Master's students, \$18,000 a year for PhD students and \$50,000 a year for post-doctoral fellows.



BC Minister of Environment Terry Lake takes media questions during the 29 August launch.

PICS internships: from renewable energy to food security

The PICS internship program provides funding for public sector and non-profit organizations to hire students from collaborating universities to work on leading-edge climate change research and policy issues. Over the summer, 11 students from the four campuses completed work terms with a range of organizations in Vancouver, Victoria and Williams Lake.

Student projects included researching low carbon transport options for the Ministry of Energy, Mines and Petroleum Resources; developing ecosystem management strategies for the Ministry of Environment; sustainability planning for the District of Saanich and the City of Williams Lake; research on water management, biochar, crops and food at SFU, and renewable energy and climate impacts on mountain biodiversity at UVic; a community-based project with Victoria's Dogwood Initiative aimed at informing a regional sustainability action plan; and coordinating an Urban Agriculture Field School for the Society Promoting Environmental Conservation (SPEC).

PICS universities score high in sustainability ratings

This August, UBC received Canada's first gold rating in a new international program assessing sustainability achievements in higher education—the STARS (Sustainability Tracking, Assessment & Rating System). The university received maximum "innovation credits" for four initiatives:

- The Centre for Interactive Research on Sustainability (CIRS): a new, innovative hub for sustainability research and action, which also houses the PICS office at UBC;
- The Bioenergy Research & Demonstration Project: a first-of-its-kind project to generate energy for the campus from biomass such as wood chips and beetle-killed pine;
- UBC's Sustainability Initiative, which works collaboratively to integrate UBC's academic and operational efforts in sustainability; and
- The Greenest City Scholars Program: an innovative program that sponsors ten UBC graduate students to work with the City of Vancouver each summer to help meet both the university's and the city's environmental goals.

Both SFU and UNBC are following closely with silver STARS ratings for their sustainability efforts. Current initiatives include a new biomass plant at SFU, expected to reduce green-house gas (GHG) emissions by 80 per cent or 11,000 tonnes/year upon completion in late 2012. The plant will provide heat and hot water for a nearby residential and commercial development at

UniverCity and nearly all of the heating at SFU's Burnaby campus.

Meanwhile, UNBC's bioenergy plant, which opened in March of this year, was recognized in 2010 as the top campus sustainability project in North America. According to new research, it has among the lowest emissions of any bioenergy plant in North America, even lower than natural gas.

UVic, not yet using the new STARS system, received an overall B+ ranking in the annual College Sustainability Report Card, with A rankings in the transportation, waste, dining, buildings and administration categories. Only two other Canadian universities scored higher, UBC and the University of Calgary, both scoring an A-. UVic also received an A- rating on environmental commitment by students in a 2011 national poll conducted by the *Globe and Mail*, the second highest rating in the country.



The UNBC plant gasifies sawmill residue to heat water that provides heat for the Prince George campus. Photo courtesy of UNBC.

New dialogue series kicks off at SFU this fall

Starting this fall, PICS and the SFU Centre for Dialogue will co-host a series of public lunch-time dialogues on transitioning to a low-carbon economy. The first event in this series is scheduled for September 21 and will profile Surrey's effort to support the infrastructure required for alternative fuels.

Also returning this month are the Pacific Climate Seminar Series at UVic and the PICS UBC-SFU Public Lecture Series in Vancouver. For more information on these and other PICS events, visit www.pics.uvic.ca/events.php.

PICS outreach to China

In August, SFU hosted 11 Chinese visitors as part of the China Council for International Cooperation on Environment and Development (CCICED) project. As part of the program, PICS-SFU Coordinator, Nastenka Calle gave a presentation on the mitigation and adaptation measures being taken by BC to tackle global warming, and provided information about PICS initiatives. She also accompanied the delegation to UBC's Institute of Asian Research, where they heard a presentation on the security implications



The Chinese visitors with PICS-SFU Coordinator Nastenka Calle.

of climate change. PICS-UBC Coordinator Sara Muir-Owen then gave a tour of UBC's new Centre for Interactive Research on Sustainability (CIRS), designed as a living laboratory to demonstrate leading-edge research and develop sustainable design practices.

UVic workshop explores novel ecosystems

As part of UVic's annual Restoration Institute this summer, PICS sponsored a one-day policy workshop entitled *Novel Ecosystems: When and how should we intervene in the new ecological world order?* The workshop brought together restoration practitioners, policy-makers, and students from around the world to discuss the practical and policy issues associated with novel ecosystems—ecosystems that differ in composition and/or function from present and past systems and are rapidly arising in response to climate and land use change. Outcomes of the workshop include a book on the topic currently in production. For more information, visit www.restorationinstitute.ca.

Going Glacier...

PICS-UNBC fellow Matt Beedle's study of northern BC glaciers and their relation to climate variability stepped up a notch in terms of public outreach with this summer's launch of his website www.GlacierChange.org. Matt says instead of communication being a one-way street, projects featured on the website aim to engage and collaborate with individuals through activities such

as repeat-photography geocaching, community glacier monitoring, and contributing to community glacier 'scrapbooks'. These efforts are in addition to more academic objectives such as publishing plain-English summaries of peer reviewed publications, presenting glacier-related news, and providing links to other glacier-related resources. The



UNBC PhD student and PICS fellow Matt Beedle on Castle Creek Glacier near McBride, BC. Photo courtesy of UNBC.

ultimate objective is to create an online space for community-generated content that results in accurate and exciting communication of the ongoing story of glaciers and climate change.

The website has already garnered media attention, with a special feature in the current issue of Northword Magazine: <http://northword.ca/august-2011/all-things-glacier>.

Why was this past spring so cold?

Isn't it supposed to be getting warmer?

For many British Columbians, the spring of 2011 seemed unusually cold while warm temperature records were being broken in other parts of Canada. Why was this past spring so cold in BC? How did it compare to previous springs based on the climate record?

To answer these questions, PICS turned to the Climate Analysis and Monitoring program at the Pacific Climate Impacts Consortium (PCIC). Analysis of Environment Canada data shows that springtime temperatures for northern BC in 2011 were cool or near average compared to the standard climatological baseline period 1971-2000. Southern BC was definitely cooler than average for the same period, but only half as cold as the coldest springs in the past. Precipitation varied from normal to wetter than average across much of the province.

The main reason for the cool spring in 2011 appears to be a longer than usual La Niña, which is the cold-phase of the El Niño Southern Oscillation (ENSO) phenomenon. ENSO is a recurring climate pattern in the Tropical Pacific Ocean that causes alternating periods of warming and cooling in BC. In the context of the much longer-term global warming trend, this persistent La Niña probably gave the impression that the cool spring 2011 in BC was exceptional.



For a more detailed analysis of this past spring and summer in BC look for the expanded version of this article in PCIC's online publications library at <http://pacificclimate.org/resources/publications>.

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