



FALL 2012

In the aftermath of November 6...

"We want our children to live in an America... that isn't threatened by the destructive power of a warming planet." So spoke a re-elected Barack Obama in his acceptance speech in the wee hours of November 7. Surely, one would think, this is a desire free of ideology, a sentiment that should register in every country and not just in the United States. But finding ways to get there—to mute that destructive power—remains a challenge of unparalleled complexity in a world where energy needs are so profoundly met by combusting fossil fuels and where ideological positions too often stand as barriers to progress.

The majority of us know that sentiment and declarations of intent alone will not foster change. Policies that encourage adoption of new, less destructive sources of energy are desperately needed. And yet we continue to find excuses not to act, to think short-term instead of long-term, to accede to baseless accusations that acting on global warming will damage our economy; in fact, evidence from Europe and right here in British Columbia (BC) now shows that the opposite is true.

This month, PICS is bringing to Victoria and Vancouver a leading conservative who for some time has been advocating for action on the global warming front. In a public lecture in Vancouver on November 15, Bob Inglis, a former Republican Congressman from South Carolina, will present his plan for mitigation of carbon emissions. Inglis lost his candidacy in the midterm Congressional elections in 2010 when he was defeated in the state primaries after publicly and strongly declaring his support for a price on carbon, a position that raised ideologically driven ire in his home state.

His visit to BC is important, for he represents a political constituency in the United States that, with the exception of the Republican administration of Arnold Schwarzenegger, has been loathe to act on the climate-change challenge. Our hope is that Canadian conservatives will heed the message he will deliver: global warming is real, human activities are causing it, and pricing carbon while reducing the tax burden elsewhere makes good environmental, social and economic sense.

But reducing emissions is only one variable in a complex equation that must include provision of

the energy that powers modern society. How we reconcile that necessity with the requirement to limit release of CO₂ to the atmosphere is a central question that drives much of our work at PICS.

In this fall newsletter you will read, among other things, about effective approaches to communicating climate change, steps being taken to facilitate the adoption of electric cars, and a report on issues associated with the contribution of shale gas to the energy portfolio. Like all work that PICS undertakes, such efforts are free of ideological divides. And that is a characteristic that would resonate with both Barack Obama and Bob Inglis, for despite being situated on different arms of the political spectrum, they share a deep interest in lessening the destructive power of warming and its future impact on our children—and the rest of us—everywhere.

- Tom Pedersen, executive director

Science is not enough: communicating climate change

By Steve Conrad, PICS fellow, Simon Fraser University

In the Fall 2012 issue of *Watermark*, I spoke to a growing need for new approaches to communicate the complexities of climate change because, despite being armed with a briefcase of indisputable data that climate change is a real concern; scientists have yet to connect fact with public belief or drive substantive action. New approaches are needed for communicating the complexities of climate change, approaches that focus on connecting audiences with the information needed to make decisions while recognizing that science is not enough. These approaches touch on what I call the four new rules of technical communication: message inversion, audience matching, storytelling, and style.

Message inversion: Scientists, engineers and many other professionals work from a "proof" mindset and present discoveries in the order of background first, methods second and findings last. More effective communication, however, presents key messages first, followed by memorable aspects of the work, then methods and other technical details as appropriate for the audience.

Audience matching: Audience matching is an often-overlooked rule in communications. Messages should be individually crafted to match the intended audience type. Moreover, whether the audience be the public, peers, management or policymakers, it is important to consider how certain technical words may be perceived. For instance, engineers may interpret the word risk as the chance that an outcome will occur, whereas the public and policymakers may take risk to mean the likelihood that something unpleasant will happen.

Storytelling: I first learned about the rule of storytelling from Randy Olson, a scientist turned movie producer. In his book, *Don't be Such a Scientist*, Randy reminds us that society is culturally rich with stories. Storytelling diverges from how technical information is traditionally shared by following a narrative that tells us why the story is significant, introduces imagery, uses suspense to keep us engaged and provides resolution.

Style: The last rule for communicating science is that, for science to be remembered, it has to have style. Hans Rosling, in his many TED talks, has introduced style into the presentation of statistics. From growing bubbles to stacked tubs, Rosling illustrates that data can be interesting and artistic. While it is unlikely that everyone can make their next technical report as interesting as that, even a small injection of style may leave the audience with a more memorable impression of the data.



PICS-SFU fellow Steve Conrad presenting his research at the PICS annual forum in June 2012.

Culture, ideology and social consensus

PICS visiting speaker Andrew Hoffman further spoke to this disconnect between scientists and the public in a recent lecture at the University of Victoria (UVic). Culture and ideology, not just scientific evidence, he argues, impact an individual's view on climate change, and members of the public develop positions that is consistent with the values held by their peers. "People will look around at the groups they are a part of," said Hoffman in a recent interview on CBC's *All Points West*, "see who they trust, both in terms of people and information sources, and adopt their views based on those sources... people form a position and then they often look for information to support that position."

Dr. Hoffman is Holcim Professor of Sustainable Enterprise at the University of Michigan. The lecture was co-sponsored by UVic's Gustavson School of Business and a video recording of the talk is available on the PICS website.

New EV charging stations for BC

The Province of British Columbia, through the Plug in BC program, is offering new clean transportation incentives to expand the province's electric vehicle (EV) infrastructure. Among them, the Community Charging Infrastructure (CCI) Fund will support the purchase and installation of up to 570 publicly accessible EV charging stations across the province. Each of the four PICS universities has applied to this fund with UBC requesting support for 10 stations, SFU for three and UNBC for two. UVic submitted an application for several stations in partnership with the Capital Regional District.

The UNBC application, spearheaded by PICS-UNBC program coordinator Kyle Aben, has now been approved. Up to 75% of the purchase and installation costs for the two stations will be covered by the CCI and the remaining 25% by the UNBC Green Fund. In order to encourage EV adoption and use, the two charging station spots will be available without paying a premium over other parking spots on campus. This initiative is an extension of the Nissan Leaf partnership between UNBC, the City of Prince George, the Northern Health Authority and the Regional District of Fraser Fort George.

Earlier this year, these four partners joined forces to purchase and share a 100% electric Nissan Leaf in order to help meet their carbon reduction goals while also piloting the use of electric cars in BC's north. So far, the vehicle has been a hit at UNBC and the two additional publicly accessible charging stations will further showcase the university's commitment to emission-free transportation, since charging costs will be absorbed by the university.



PICS-UNBC program coordinator Kyle Aben with the Nissan Leaf at UNBC.

The new stations to be installed by March 31, 2013 will typically recharge the battery of a 100% electric vehicle in six to eight hours or the battery of a plug-in hybrid-electric vehicle in three to four. The cost of fully charging the Nissan Leaf batteries is approximately \$2.25, yielding a range of up to 160 km.

EV planning for Campbell River

On October 4, PICS-UBC program coordinator Sara Muir-Owen joined the Pembina Institute in facilitating a workshop on EV infrastructure and planning for the City of Campbell River. The City was recently awarded Plug in BC funds to assist with the planning and installation of 10 EV charging stations to

be used by its fleet as well as members of the public. About 18 representatives from the City, environmental organizations and local businesses attended the workshop. Pembina, with assistance from PICS, led the group in developing a shared understanding of electric cars and related infrastructure, alongside the benefits of EVs for the broader community, such as GHG reduction and improved air quality. Throughout the course of the one-day workshop, the group worked together to map out priority locations for EV charging stations, outline possible public-private partnership opportunities to support infrastructure development, and discuss a communications strategy for the City to unfold its new electric network.

PICS and Pembina host shale gas forum

Throughout the summer, PICS-UBC worked with the Pembina Institute and other partners to help organize a national “Shale Gas Thought Leaders Forum” in September. The event, held over two days at the UBC Point Grey campus in Vancouver, brought together shale gas industry leaders with decision-makers from across Canada and the US to discuss the future of shale gas development in Canada. Following Chatham House rules, Pembina staff skillfully facilitated open dialogue on environmental concerns, industry standards and practices as well as policy frameworks and enforcement amongst a diverse group of over 80 stakeholders from First Nations, community groups, academia, the public sector, private industry and environmental non-government organizations.

The forum aimed at fostering mutual understanding on critical issues and supporting partnerships and collaboration among divergent groups with very different perspectives. Such understanding and collaboration is recognized by Pembina as a crucial starting point to developing viable action on and solutions to the shale gas industry’s core environmental and climate change concerns. A summary report of the event prepared by Pembina will be available shortly.

PICS research helps Surrey meet environmental goals

In collaboration with the City of Surrey, PICS postdoctoral fellow Syed Ahmed and Mehdi Shahraeeni, a MITACS postdoctoral fellow, are developing the first version of a comprehensive lifecycle assessment tool to measure the environmental impact of different vehicles.

Developed under the supervision of Erik Kjeang and Kourosh Malek at SFU, this tool will assess conventional and alternative vehicles – hybrid, plug-in hybrid, electric, hydrogen fuel-cell and liquid propane-powered – at various points in their lifecycles. The approach considers all steps required to produce a fuel

and manufacture a vehicle as well as operate and maintain the vehicle throughout its lifetime, including disposal and recycling.



SFU researchers Syed Ahmed (back) and Mehdi Shahraeeni. Photo by Marianne Meadahl, SFU Media Relations.

The tool is specifically targeted at analyzing GHG emissions and total lifecycle costs of fleet vehicles. Initial analyses have been profound in helping the City of Surrey meet its environmental goals by assessing the reduction in GHG emissions and cost of switching light-duty fleet vehicles to the all-electric Nissan Leaf. As an additional result, Surrey has contracted new heavy-duty compressed natural gas trucks for refuse collection. Continuous collaboration with the City is underway to increase the practicality and accessibility of the tool.

Carbon democracy: our past, present and future

By Anita Girvan, PICS fellow, University of Victoria

What do carbon and democracy have in common? According to Timothy Mitchell, professor of politics and author of *Carbon Democracy* (2011), they are inextricably linked through a history of political and material movements throughout the 19th and 20th centuries. Mitchell, who spoke at UVic in October, traces the emergence of democracy alongside the move away from agrarian lifestyles based on solar, water and wood energy on a small scale, toward larger scale societies enabled by fossil fuels in the forms of coal and oil. These fossil fuels have led to the creation of political economies and technologies based on a seemingly inexhaustible energy regime.

He argues that this shift offered opportunities for mass politics and energy production on an unprecedented scale, but also created vulnerabilities, such as peak oil, where the fiction of a rapid growth economy meets its limits, and climate change, which threatens to disturb an ecological order upon which life as we know it depends. Mitchell draws on hybrid historical and political-economic perspectives in order to carefully revisit and recontextualize major historical events of the 20th century in light of carbon, which he argues has been systematically under-acknowledged as the fundamental enabler of the economy and geo-politics in this era.

As we grapple with solutions to climate change, we must ask ourselves: what comes after carbon democracy?

New online portal houses BC weather data

Featured at our June 2012 Forum, "The Road Ahead", the Climate Analysis and Monitoring (CAM) project has journeyed down the road to its first major milestone: the release of a data portal for BC weather – from the present to as far back as 1872 – from over 6,000 stations across the province.

The Provincial Climate Data Set (PCDS) Portal will be hosted and maintained by our sister organization and lead partner on the project, the Pacific Climate Impacts Consortium (PCIC). The portal provides public access to such weather records as temperature, precipitation, wind speed and humidity. An interactive map of BC allows users to zoom in on a region of interest, learn about the stations in that area, select stations based on observation date, weather element, observing agency, region and more.

Part of the Climate Related Monitoring Program (CRMP), a partnership between several BC government ministries as well as federal, private and other agencies, the portal has widespread application for researchers, engineers, industry and anyone with a keen interest in the climate of the province or its historical weather. Municipal engineers, for example, can use the data to plan updates to storm drainage systems or manage drinking water supplies, and forest managers can use it to assess forest fire risk.

The next milestone on this journey to monitor BC's climate will be the production of high-resolution temperature and precipitation PRISM maps to be made available on the portal.

A new partnership with PWIAS

PICS-UBC has formed new ties with the Peter Wall Institute for Advanced Studies (PWIAS), working together for the first time in October to host a talk by Dr. John Robinson on "The role of the university in facing sustainability challenges". Dr. Robinson, associate provost, sustainability at UBC and former PICS program committee member, stresses the need to plan for regenerative sustainability and asserts that net-zero is not enough for impending urban population surges. He suggests

that universities possess a unique opportunity to act as "sandboxes" for improving human and environmental wellbeing and that sustainability should be the underlining theme for every project.

The free talk was part of a new program offered by PWIAS, called The Wall Hour, which is hosted in various locations across the UBC campus and in collaboration with different faculties and centres.

Coming up at PICS...

On November 15, PICS will be hosting former Republican Congressman Bob Inglis for a free public lecture entitled "A revenue-neutral tax swap for America" at the SFU Segal Graduate School for Business in downtown Vancouver.

Also on November 15, Stephen Sheppard will launch his new book *Visualizing Climate Change: A Guide to Visual Communication of Climate Change and Developing Local Solutions* at UBC.

On November 20, the joint PICS - SFU CarbonTalks series presents Marc Lee from the Canadian Centre for Policy Alternatives on the topic of "Liquefied natural gas in BC - risk or reward?" at SFU Harbour Centre. Other fall 2012 events in this popular series have included a panel discussion on BC's carbon tax shift, hosted in collaboration with Sustainable Prosperity; a presentation on wind energy in BC by Nicholas Heap from the Canadian Wind Energy Association (CANWEA); and a review by Minister of Environment Terry Lake of BC climate change policy since 2008. Webcast recordings of past talks are archived on the PICS website.

The Pacific Climate Seminar Series, jointly hosted by PICS and PCIC at the University of Victoria, will wrap up for the season on November 21 with a presentation on electric vehicles by PICS-UVic fellow and PhD candidate Trevor Williams from the Institute for Integrated Energy Systems (IESVIC).

Following two well-attended presentations on climate change, water and food security earlier this fall, the PICS UBC-SFU public lecture series will continue in January 2013 with a focus on the topic of sustainable energy systems: technological innovation in BC, public responses and challenges.

More information on the above events is available at pics.uvic.ca/events and pics.uvic.ca/events/archive

CONTACTS

Dr. Tom Pedersen
Executive Director

Dr. Lawrence Pitt
Associate Director

Megan Jameson
Administrative Officer

Jessica Worsley
Communications & Event
Coordinator

Wendy Phelan
Executive Assistant

Coralie Breen
Short Course Facilitator

Pauline Shepherd
Research Assistant

Stephanie Inman
Research Assistant

Kyle Aben
Program Coordinator
University of Northern BC

Nastenka Calle
Program Coordinator
Simon Fraser University

Sara Muir-Owen
Program Coordinator
University of British Columbia

Pacific Institute for
Climate Solutions
University of Victoria
PO Box 1700 STN CSC
Victoria, BC V8W 2Y2

Phone (250) 853-3595
Fax (250) 853-3597
E-mail pics@uvic.ca
Web pics.uvic.ca