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PICSnews

FALL 2015

The business of emissions reduction

PICS new executive director Dr. Sybil Seitzinger: optimism and action after Paris

Real, visible and tangible - those words sum up not only the high-tech climate solutions on display at the Paris climate summit but also the sea-change in sentiment, that has resulted in 195 nations signing the world's first comprehensive climate agreement.

December 12th 2015 saw the adoption of the first global pact to fight climate change, at the United Nations Conference of the Parties (COP21) – a hugely significant achievement given the competing interests at stake, especially between the industrialized and developing nations. This shared willingness to commit to the ambitious target of keeping average global warming below 2 degree Celsius (while striving for 1.5 degrees) shows how far we have come in recent years.

Dr. Seitzinger talking about COP21on CBC's Quirks & Quarks

My experience with COP dates back to 2009, being inside the COP15 negotiations at Copenhagen in my former role as executive director of the International Geosphere-Biosphere Programme. This time around at COP21 I attended events outside the negotiations to meet, share information, and potentially collaborate with others working on climate solutions, like PICS.

In the six years between these events, there has been a shift toward seeing the planet as a whole, as opposed to only developed countries needing to act on climate. While COP15 had a top-down approach that failed to secure a treaty, COP21 has clearly delivered on the back of a global, often grassroots, movement.

COP21 brought an unprecedented level of engagement from civil society, cities, government and especially the businesses community, not just on recognizing climate change but acting on it. Not only did hundreds of exhibitors and speakers showcase their work but surprisingly, they were also willing to share information—some no doubt of commercial value—in order to make progress on this collective problem.

Seeing first-hand the breadth of creative new technology emerging shows that humanity is on the brink of an energy revolution, fuelled in part by innovations such as evolving electric and hydrogen vehicle designs, efficient irrigation systems, and low-velocity wind "trees" for home electrification. Adaptation was also an important part of the equation, with researchers sharing information on regional plant survival in a changing climate, for example. This COP was also the first to bring oceans into the mix in a major way.

Cities were among the biggest sharers of information; nearly 1000 mayors from five continents signed an agreement at Paris toward major GHG reductions, and Vancouver was honoured for its Greenest City Action Plan. Laying out the groundwork for reaching such targets was the subject of a forum on the Deep Decarbonization Pathways Project (DDPP) including work by scientist Jim Williams from the US-Canadian firm, E3.

Decarbonisation and transitioning to a prosperous low-carbon society cuts to the heart of what we do at PICS. Within our research agenda are several major projects that take the "big picture" approach to reducing emissions and improving energy efficiency within BC's transportation, buildings, forestry, and inter-provincial electrical grid sectors. Our research teams are looking at integrated planning options, because one climate solution does not stand in isolation. For instance, moving to electric transport will place more demands on the grid, so what combination of actions will best meet that demand, and at what cost? Consideration also needs to be made to what neighbouring provinces and states are doing, so infrastructure rollout doesn't end at the border.

Canada, as signatory to the new climate agreement, has emerged from COP21 with a restored reputation and new commitments to support a clean tech future here and in developing nations. PICS will continue to support government and business leadership toward a low-carbon future and deliver integrated solutions to help society to adapt to the climate changes before us.

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.

PICS lead-up to COP21

Raising public awareness about the urgent need for climate action has been a priority for PICS ahead of COP21 held from Oct. 1– Dec. 11. Here are some of our fall events:

Tim Flannery's road to Paris

Internationally acclaimed scientist, author, explorer and conservationist, Tim Flannery, gave a sold out Vancouver lecture on October 14, with more than 550 people attending the evening event, "Climate change, the resource economy & the road to Paris." Professor Flannery—who currently heads the Australian Climate Council and was named Australian of the Year in 2007—is the recipient of SFU's 2015/16 Jack P. Blaney Award for Dialogue in recognition of his efforts in advancing the global conversation around climate change.

Flannery's lecture (and subsequent op ed) tackled the thorny topic of how to reconcile climate action with economic growth and resource development, and the need for Australia and Canada to find alternatives to a carbon-based economy. The event was also the Canadian launch of Flannery's latest book, *Atmosphere of Hope*, which explains that climate catastrophe is not inevitable but that time is running out.

Flannery also met with ministers from three provincial governments while in Canada, and attracted extensive media coverage including the *Sunday Edition*, *Power and Politics*, *Globe and Mail,* and *The Hill Time*. The event was co-hosted by the SFU Centre for Dialogue, PICS and the City of Vancouver.

A new climate reality for Australia?

Much has changed in the life of leading Australian economist Martin Parkinson since he visited Vancouver and gave his PICS-supported Carbon Talks lecture on October 1, 2015. At that time he was the former Australian Treasury secretary, after being controversially sacked by Australian Prime Minster Tony Abbott in January this year—reportedly due to helping the previous Labor government develop its climate change policies as was his duty as secretary of the former Department of Climate Change between 2007 and 2011.

Dr. Catherine Potvin at her recent UVic lecture

This December has seen a complete reversal in his fortune, with Australia's new Prime Minister, Malcolm Turnbull returning Dr. Parkinson to government as the country's most senior bureaucrat. On December 3, the government confirmed his new status as the new secretary of Prime Minister and Cabinet, starting January 23, 2016.

In his SFU talk, Dr. Parkinson said climate change is a major threat to Australia, citing the country's "food bowl", the Murray Basin, facing a potential loss of agriculture by 2100. Yet despite the worsening impact of climate change on a country with high per-capita emissions, Parkinson explained how taking climate action is politically poisonous in Australia, having arguably led to the loss of office of 3 Prime Ministers and 2 Opposition Leaders.

In his talk entitled, "The economics and politics of carbon pricing in Australia", Parkinson outlined the turbulent history that has seen his country being the first developed nation to introduce and then drop a carbon tax. The September leadership coup that elevated Turnbull to prime minister has raised hopes that Australia could become a climate action leader, given that Turnbull lost the leadership of his party in 2009, in part, for backing emissions trading.

However, Parkinson told the audience a dramatic change in policy is unlikely, at least in the short term. Instead he believes Australia will move from a being a blocker of international climate change to a supporter. Actions to date at the COP21 in Paris would suggest he is right, with Australia's government saying it would not renegotiate its emissions reductions targets of 26-28 percent by 2030, until at least 2020.

Beyond Paris with Dr. Potvin

"We will have to adapt, it's unavoidable now"

At her UVic December 1st lecture, "Acting on Climate Change: Beyond Paris", Dr. Catherine Potvin emphasized the importance of climate adaptation, saying that mitigation alone will not be sufficient. Dr. Potvin leads the Sustainable Canada Dialogues, an interdisciplinary network of scholars working on policy options to facilitate Canada's transition to a low-carbon future.

In her lecture, Dr. Potvin unpacked what is at stake internationally and for Canada at COP21, expressing her optimism that targets would be met and ratcheted up as new technology and solutions come on board. She also encouraged scientists and policymakers to keep their minds open to novel technologies. "We need to get people who can think outside the box and imagine things that do not exist yet."

Dr. Potvin served as Panama's negotiator at the UN Framework Convention on Climate Change between 2005 and 2011. She is a Fellow of the Royal Society of Canada, and a Professor and Canada Research Chair in Climate Change Mitigation and Tropical Forests at McGill University.

Simple loans for energy efficient homes

BC's Climate Leadership Team has picked up on recommendations from a PICS white paper released this fall that promotes on-bill financing as a quick and effective way of retrofitting homes for greater energy efficiency

The paper, Cheaper Power Bills, More Jobs, Less CO2, analyses 30 schemes whereby building owners repay the cost of energy retrofits via their electricity bills. Under OBF programs, energy utilities provide loans to customers to pay for improvements such as insulation, solar hot water, heat pumps and draft-proofing. Loan payments are simply added to utility bills. The decreased energy demand (as a result of the retrofit) lowers energy costs so that there's little-to-no net change in utility bills until the loan is paid off.

Carter Williamson & Tingtin Wan, part of the research team behind PICS On-Bill-Financing white paper

Such scheme have been trialled in BC before and failed – but this report identifies missing key elements that have made OBF a huge success elsewhere, including Manitoba that retrofits 5,000 houses per year. The essential elements are that government (rather than the utility) market OBF; that promotion is also supported by accredited construction contractors who can submit loan applications on behalf of homeowners and carry out the retrofits; and that loan underwriting criteria be fairly relaxed.

The climate leadership team's Recommendations Report released by the BC government in November cites OBF (recommendation #20) as a program to encourage retrofits and improve energy efficiency in existing building stock.

Keeping up with the Johansens: EVs

A new PICS report released this fall shows how BC could potentially replicate Norway's electric vehicle revolution, and greatly reduce its largest aggregate source of GHG emissions – transportation.

The Scandinavian nation has a similar size population, mountainous geography and hydroelectric profile to BC but roughly 30 times the number of electric vehicles (74,000 sold within 6 years)—the highest per capita penetration of EVs in the world. Currently more than 20 per cent of all new cars sold are electric, and those numbers keep rising. So what's the secret?

The briefing note, "Norway's electric vehicle revolution: Lessons for British Columbia", explains that while financial incentives such as tax breaks and rebates (as offered in BC's popular Clean Energy Vehicle scheme) are attractive, it was Norway's extra perks such as free parking, free ferries, free toll roads and access to bus lanes that made EV purchases irresistible to new car buyers. Backing this up was a major rollout of re-charging stations across the country, both for driver convenience and peace of mind.

The report outlines what Norway got right, how much it cost, and what challenges lie ahead in its EV revolution, plus recommendations for how BC could implement a similar program here. It has gained strong traction in mainstream media, as well as interest from government agencies investigating clean transport options.

New PICS UNBC campus coordinator

PICS welcomes its new campus coordinator and research manager at UNBC, Michelle Connelly who started this fall. Michelle became concerned about the impacts of climate change after learning about declines in yellow-cedar because of warming winters. Michelle is supportive of conserving natural landscapes as a way of avoiding emissions. Respecting the connections between humans, other species, and the landscapes we all inhabit, she gets inspiration from Canadians like Sheila Watt-Cloutier, whose book The Right to be Cold had a profound impact on her.

Michelle Connelley, PICS' new UNBC campus coordinator and research manager, being interviewed for CKPG News

Michelle has a BSc in forestry from UBC and an MSc in forest ecology from UNBC, and her roles previous to PICS include biologist, technical writer, researcher and field technician for various governments, academia and non-governmental organizations.

Quantifying glacier loss and futures

PICS UNBC Fellow Ben Pelto is part of a research team providing frontline data on the shrinkage and loss of iconic British Columbia glaciers—information that will be used to help develop adaptive management strategies to deal with changes in water availability and timing.

The past year Ben has made four fieldtrips to the Konanee, Conrad, Nordic and Zillmer glaciers that feed the Columbia

PICS Fellow Ben Pelto conducting fieldwork to monitor BC glaciers

River Basin. The study seeks to better understand the role that glaciers play in the trans-boundary watershed that is shared between Canada and the United States. Glaciers provide fresh water to the Columbia River during the summer months when winter snowcover has been depleted. Understanding the changes in timing and quantity of glacier runoff in the basin is critical from a water resource management perspective, as well as for downstream ecosystems and species such as salmonids, which depend on cool conditions and plentiful water.

The team is using a combination of field-work, remote sensing technology, and computer modeling to quantify past, current and future changes in glacier cover over the next 100 years.

The "dragons of inaction"

"I recycle, I'm done" is an example of one of the psychological barriers to climate change action outlined by Dr. Robert Gifford in his public lecture "The Dragons of Inaction: Why Good Intentions Often Do Not Lead to Action-and Seven Ways to Fix This" on September 16th at UVic.

Dr. Robert Gifford at his recent lecture on the psycological barriers to climate action

Dr. Gifford identified over 30 distinct 'dragons of inaction', which restrict how much climate positive action people take. For example, the global scale and long time frame of the climate change problem allows people to believe that it will affect distant geographical areas or that it will occur far into the future. The various 'dragons' ultimately all involve rationalizing choices to maintain a CO2 intensive lifestyle and avoid making changes.

Dr. Gifford also offered a variety of solutions designed to address the 'dragons'. He suggested crafting messages that communicate climate change is happening here and now, rather than in the future or far away. He also advocated creating infrastructure to make the climate positive actions the easiest choice; e.g. building cycling paths, electric vehicle charging stations or widely distributing recycling bins. Robert Gifford is a professor of psychology at UVic.

The Climate Nexus

Check out a new book from SFU's Adaptation to Climate Change Team called "The Climate Nexus: Water, Food, Energy and Biodiversity in a changing world" by Jon O'Riordan & Robert William Sandford. PICS fellow Sukhraj Sihota, from SFU's School of Public Policy, contributed significantly to this work. The book explains how understanding the interconnection between the nexus elements - water, food, energy and biodiversity - is of crucial importance in better managing and protecting these vital resources.

Sukhraj Sihota's research focuses on climate change and the energy-water-biodiversity nexus in the Columbia River Basin - her thesis is "Swimming Against the Current: Valuation of White Sturgeon in Renewal of the Columbia River Treaty".

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