Pacific Institute for Climate Solutions
Knowledge. Insight. Action.

PICS Climate News Scan – 3 July 2012

Produced by ISIS, Sauder School of Business, UBC
Authors: Justin Bull, Liz Ferris, Clea Moray, James Noble, Tim Shah
Editors: Neil Thomson (ISIS), James Tansey (ISIS), Jessica Worsley (PICS)

The PICS Climate News Scan is a weekly summary of the major climate-change related science, technology, and policy advances of direct relevance to the BC provincial and the Canadian federal governments and more generally to businesses and civil society. The News Scan focuses on cutting edge climate issues and solutions gathered by the fellows and faculty of ISIS, a research centre at the Sauder School of Business, in partnership with the Pacific Institute for Climate Solutions (PICS). Access to some referenced articles may require a journal subscription or purchase of the article, and appropriate links are provided for this purpose. To be added to the News Scan distribution list or to provide content feedback and/or suggestions about interesting news items, please email picsscan@uvic.ca.

Complementing the News Scan is the PICS Briefing Note Service. This service provides timely and concise analysis, as well as suggested policy action, on issues related broadly to BC climate change mitigation and adaptation.

Research Theme I: The low carbon emissions economy

Strong majority favours BC's carbon tax

June 25, 2012. British Columbia's carbon tax has broad-based support from businesses, non-governmental organizations, academics and community leaders, and most think the policy has been positive for the province. A new study released by the Pembina Institute assesses the overall consequences of the carbon tax based on input from BC's economic and social sectors. Results point to a growing consensus among the study's respondents that climate change is a threat to the environment and economy, and that government policy is needed to help minimize the risks associated with climate change. Furthermore, while the BC government has examined several policy options to curb greenhouse gas (GHG) emissions – such as cap-and-trade, for example – respondents preferred a carbon tax, stating that it is a simpler and more transparent policy instrument. Revenue collected by BC's carbon tax in 2012/13 is estimated to be $1.17 billion. As currently designed, most of the funds collected from the carbon tax are used to pay for corporate tax cuts. However, a majority of respondents in the study stated they would prefer the money to be invested in projects that reduce GHG emissions.

While BC's carbon tax may be the most ambitious carbon pricing system in North America, the concept has a much longer pedigree internationally. Carbon tax policies have been in existence in Scandinavian countries since the early 1990's, and most recently in Australia. Like the BC carbon levy, many of these foreign carbon pricing systems are designed to be revenue neutral, however, rather than applying funds towards corporate tax cuts, revenues collected from carbon taxes are typically used to spur new job opportunities and seek further opportunities to reduce emissions. KPMG has just released BC's Technology Report Card for 2012, revealing the sector as a leader in both GDP and job creation. The technology industry has benefitted from the mere presence of the tax, and has the potential to grow exponentially with "a heightened level of intention in terms of policy and industry development." While the BC government undertakes a comprehensive review of the carbon tax over the next year, the policy presents an opportunity for the province to firmly establish its leadership in North America by demonstrating that it is possible to decouple economic growth from rising GHG emissions.

Research Theme II: Sustainable communities

Dawson Creek lights the way

June 23, 2012. Dawson Creek, a city of 12,000 people located in Northeastern British Columbia, is leading the way to the province's green energy future. With a mix of renewable energy initiatives including the region's Bear Mountain Wind Park and solar thermal hot water systems on most of its public buildings, Dawson Creek is committed to significantly reducing its carbon dioxide (CO_2) emissions. At the heart of the City's climate action initiatives is its pioneering municipal carbon fund with the City self-imposing a $100 per tonne levy on its own GHG emissions. A municipal audit completed last year reported that the city emitted 3,600 tonnes of CO_2, which resulted in $360,000 being put aside to fund energy efficiency and renewable energy projects. At $100 per tonne of carbon, the business case for less carbon intensive projects like solar thermal hot water systems becomes more cost-effective. A simple net present value analysis comparing two building types in Dawson Creek with carbon fund contributions factored in, found that over a 35-year period, the more energy efficient building is more economical.

Dawson Creek's leading efforts in climate change mitigation are a good example for communities across BC, as 180 local governments and the Islands Trust have signed the province's Climate Action Charter to become carbon neutral by 2012. Many communities in BC are taking advantage of provincial grants that allow them to achieve their own GHG reduction goals. The BC Climate Action Toolkit has been another success story of fostering knowledge sharing and collaboration between BC municipalities. However, not many have the advantage of using a carbon fund to earmark dollars for projects that directly reduce emissions. As the provincial carbon tax is up for review this year, and with new studies showing high support for dedicating revenues to GHG reductions projects, Dawson Creek's carbon fund may be an illustrative case study for how communities can politically and financially commit to renewable energy projects to achieve their goals.

Bigger is better when it comes to wind turbines

June 20, 2012. A new study in the journal *Environmental Science & Technology* explores the question of whether larger wind turbines have made wind energy more or less environmentally friendly. As larger turbines require more resources to construct and transport, there is reason to believe that they could have a high life cycle cost. The authors report that the average size of wind turbines has grown 10-fold in the last 30 years. They found that larger turbines have resulted in greener electricity. With advances in research and development in wind energy, wind turbine manufacturers have become more experienced at increasing the turbines' efficiency. Improved turbine design coupled with greater experience and knowledge has permitted more efficient construction of turbine blades capable of harnessing more wind without proportional increases in turbine mass. Such changes have improved the life cycle assessment of wind turbines, as fewer materials are needed for construction, and less fuel for transportation.

Some Canadian studies have shown what parts of the country are suitable for greater wind energy deployment. A recent article reported that BC Hydro assessed 121 potential wind energy sites across the province and found that BC's onshore wind energy resources have the ability to generate 39,000 GWh of power a year which is about two-thirds of the province's current total domestic demand. According to some organizations, the cost of developing clean wind energy has dropped by 20 percent in the past three years alone. Technology improvements have increased productivity by 27 percent. On the social aspects of wind energy, a recent poll found that 76 per cent of British Columbians either strongly agree or agree that wind energy should be further developed as a source of clean electricity. Given current debates about the province's energy future, there may be merit in revisiting its view on wind energy.

Research Theme III: Resilient ecosystems

Track top predators to understand climate-driven extinctions

June 21, 2012. In the latest issue of *Science*, researchers argue that many estimates of the number of species extinctions that will result from climate change are too low, because they consider each species separately and do not account for the important effects of the interactions between the species within a given ecosystem. The paper explains that changes in the health of populations of top consumers – both predators and herbivores – can have a strong cascading effect on their neighbouring species. These consumer species can therefore amplify the effects of climate change on the many other species in their ecosystems, including an increased risk of extinction. The paper promotes focusing monitoring activities on these 'biotic multiplier' species and their interactions as a way to better understand how ecosystems respond to climate change and to provide a focus for conservation efforts.

This research is part of a growing trend towards conserving biodiversity by protecting important ecosystem-level processes, such as the interactions between species. This approach is consistent with the strategies that are being developed in BC to deal with climate

effects on biodiversity. Over 40% of BC's species assessed to-date are of provincial conservation concern, and the number of species under threat of extinction will only grow as the effects of climate change increase. Last year, BC's Task Force on Species at Risk argued that the sheer number of species that are threatened with extinction in BC makes it impossible to focus recovery efforts on the basis of individual species, as directed by the Federal Species at Risk Act. Instead, the Task Force recommends that BC emphasize an ecosystem-level approach to species at risk, and focus its limited conservation resources towards protecting the structure and processes of ecosystems as a whole. Keeping tabs on changes to BC's important top consumer species and their interactions can be a useful avenue to understanding and protecting ecosystem resilience, and thereby mitigating the impacts of climate change on BC's biodiversity.

Research Theme IV: Social mobilization

You don't need to believe in climate change to act, study finds

June 28, 2012. A recent study published in *Nature* finds that people who don't believe in anthropocentric climate change can still act 'pro-environmentally'. Social scientists have long sought to find ways to change the attitudes of climate change 'deniers'. This research has been done under the assumption that it is necessary to believe that the climate is changing in order to participate in actions that lead to mitigation. The study finds however, that people who don't believe in climate change can still participate in mitigating action, and act more pro-environmentally when they think this action will lead to greater economic/technological development or create a more caring and considerate society. Research on co-benefits has identified many mitigation actions that produce multiple positive effects on society in areas such as pollution control, air quality and health. The findings in this study suggest that it may be beneficial to research climate change mitigation actions that are perceived to also lead to a better society. Overall, the study finds that the focus in communicating climate change mitigation should be less on the reality of climate change and associated risks, and more on the ways that mitigation action leads to the promotion of a better society.

This study is consistent with the findings of an April 2012 Ipsos Reid Poll of the attitudes of British Columbians conducted on behalf of the Pacific Carbon Trust. The poll, which surveyed 806 British Columbians, found that there is strong support for government action and investment in the clean-tech sector, with 79% of respondents agreeing that "the BC government should be working to stimulate jobs and investment in the clean-tech sector". However the recent poll also implies that the majority of British Columbians already believe that the climate is changing and support mitigation action. More than seven in 10 British Columbians (72%) agree that "The BC government should continue to take an active role in reducing greenhouse gas emissions and fighting climate change".

Research Theme V: Carbon management in BC forests

Fibre supply shortage a threat to forestry, bioenergy, and carbon

June 15, 2012. The forestry sector in BC is facing a long-term decline in timber supply as beetle-killed wood is logged out or has low or zero value when processed. Speaking at the International Bioenergy Conference in Prince George, Jim Girvan of MDT Ltd. suggested that the pine bark beetle has killed about half the province's pine. Most of what remains is inaccessible, severely degraded, or too costly to remove. Because this long-term decline in supply has coincided with a weak US housing market, 18 major sawmills have shut down across BC. These sawmills produce the wood waste that most bioenergy projects rely upon and, without this waste, pellet plants, gasification plants, and other bioenergy projects will have difficulty finding enough cheap fibre to remain cost competitive. Consequently, bioenergy projects will have to start looking beyond traditional waste streams to secure the fibre they need. This will increase both their costs and the carbon footprint of their operations, as more of the energy used in harvesting wood will be allocated to the final bioenergy product.

This analysis confirms the findings of a recent Auditor General (AG) report that criticized the provincial government's efforts to manage the long-term fibre supply in BC. The AG found that the government was not taking sufficient steps to measure the fibre supply in the province, nor was it acting aggressively to replant degraded beetle-impacted forests. The declining fibre supply has implications beyond sawmills and pulpmills. Bioenergy projects might suffer, but carbon and conservation projects could also be threatened. Marginal lands, where the carbon value is competitive with timber value, could face more pressure to be harvested in an era of constricted supply. Already, and not without controversy, the government is considering lifting logging bans in forest reserves to help alleviate the fibre supply shortage. The government is also considering the development of new tenure licenses to allow bioenergy projects to remove wood debris from harvest sites. This debris, however, plays a vital role in maintaining biodiversity and its removal could degrade the long-term health of the forests. This interconnectedness of forests, energy, conversation and carbon makes management and policy development remarkably complex.

Also in the news

Despite spills, Enbridge pushes for more oil sands pipelines

EPA greenhouse-gas rules upheld by U.S. appeals court

Factbox: Main points in Rio+20 agreement

Eat less meat and farm efficiently to tackle climate change, scientists say

Global shift to obesity packs serious climate consequences

BC Liberals declare natural gas a clean energy source

Sea levels rising on US East Coast much faster than global average

FAO publishes report on investment in forestry

Largest ever analysis of respiration reveals insight into climate change

Bridging the greenhouse-gas emissions gap

Harnessing nature to help people adapt to climate change

Exhibition: Cultural response to climate change

Cleantech M&A activity up 41% in Q1 2012: Ernst & Young report

New study demonstrates the role of urban greenery in CO2 exchange

Deadly BC flooding continues to prompt evacuations, highway closures