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Briefing Note 2011 – 30

17 March 2011

The challenges of British Columbia's "carbon neutral government" mandate

Produced by [ISIS, Sauder School of Business, UBC](#) – in partnership with the [Pacific Institute for Climate Solutions \(PICS\)](#)

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Issue

British Columbia's commitment to carbon neutral government operations relies on public sector organizations (PSOs), which are already leading the charge to reduce greenhouse gas (GHG) emissions. While the government's commitment is clearly a step in the right direction, tight timeframes for implementation of carbon neutrality and the lack of financial resources and expertise in many PSOs pose concerns about overall GHG mitigation strategies, assessment of trade-offs associated with projects, and the need to explore all viable alternatives. Thus, implementation of the carbon neutrality mandate will benefit from more in-depth analysis and timely enhancements based on lessons learnt so far. This briefing note examines the intellectual, practical and financial support mechanisms that may help PSOs adopt optimal or least-cost approaches to reduce GHG emissions while maintaining the capacity to deliver core services in the short and long term.

Background

In 2007, as part of an aggressive climate action plan, British Columbia (BC) announced its commitment to "carbon neutral" government operations by 2010. This commitment was part of a number of other mitigation strategies, policies and initiatives that included a revenue-neutral carbon tax and enabling legislation for a cap and trade system. Carbon neutrality has been defined as: a) measuring operational GHG emissions; b) reducing these where possible; c) offsetting the remainder to ensure net emissions are zero; and d) demonstrating leadership through public reporting.¹ The impact of this mandate could be far-reaching, affecting not just government operations and services, but also related sectors, organizations and individuals. However, to date it has received little systematic assessment outside of government's own efforts related to the continuous improvement of the initiative.

There are encouraging signs that PSOs are taking this mandate very seriously. For example, the government's latest *Carbon Neutral Update* reports that 51% of PSOs in 2009 were

focused on building energy performance baselines for owned buildings, with another 20% planning to establish baselines between 2010 and 2012. Additionally, 77% of PSOs either reported ongoing or completed retrofit projects in 2009, or projects in development for 2010-2012.ⁱⁱ Large-scale infrastructure projects, such as the \$26 million University of British Columbia (UBC) biomass gasification system, have been partly motivated by the desire to avoid projected short and long-term costs of both the carbon tax and carbon neutrality mandate. This project will reduce the university's natural gas consumption by up to 12%, eliminate up to 4,500 tonnes of GHG emissions per yearⁱⁱⁱ and help UBC reduce its future carbon tax and offset costs. Otherwise, in the short term, UBC's estimated annual carbon tax (and carbon offsets from 2010) would have increased from \$289,000 in 2008 to over \$3.3 million by 2013. Over the next 25 years, the net present value of the carbon tax and the cost of offsets under a business-as-usual scenario are \$25.5 million and \$24.5 million, respectively.^{iv}

Notwithstanding these encouraging signs, there are several issues that merit review:

(i) *Appropriateness of policy boundaries* – Currently, GHG emissions covered by the mandate are confined to scope 1 (on-site emissions) and scope 2 (off-site emissions due to purchases of electricity), and some scope 3 emissions (business travel by core government employees and use of paper). Scope 1, 2, and 3 are categories used in a leading accounting tool, the *Greenhouse Gas Protocol*.^v For some PSOs, scope 3 emissions (which include a large number of other indirect emissions that are not part of the mandate) make up a significant proportion of their total emissions, and there may be more cost-effective means to reduce these compared to their scope 1 or 2 emissions.

(ii) *Financing and prioritization* – In many cases, substantial funding over and above their regular budgets is needed for PSOs to implement projects that will have a transformative effect on their energy consumption and fuel choice, and hence GHG emissions. This challenge is exacerbated by low energy prices and low energy consumption rates (due to the milder climate) in the Lower Mainland and Vancouver Island – reducing long-term energy savings and the capacity to borrow funds today on the basis of future savings. In recognition of this, the government has dedicated \$75 million over three years to help fund strategic energy reduction projects through the *Public Sector Energy Conservation Agreement* (PSECA).^{vi} BC Hydro and FortisBC (formerly known as Terasen Gas) are partners in this Agreement. The third round of funding (PSECA 3) specifically targets four categories of projects, reflecting how the government is evolving its implementation and making improvements to better support PSOs. While these funds have enabled a number of projects to go ahead, the ideal funding requirement to transform the public sector GHG footprint is in the order of \$1 billion. In the absence of this much higher level of funding, PSOs are forced to purchase offsets. Given that PSO operating budgets have not been augmented for such purchases, their offset payments may take away from other operational objectives – such as meeting core service obligations.

(iii) *GHG intensity of energy alternatives* – PSOs and many other organizations are making fuel choice decisions on the basis of gross averages and incomplete life-cycle GHG intensities. The GHG implications of their decisions will depend upon how they affect energy demand at different times of day, the energy sources called upon and the need for new investments. For example, additional off-peak demand for electric heating may be supplied through coal-based electricity production in Alberta: a decision with a GHG intensity of more

than 800 t/GWh or roughly 40 times the average figure reported by BC Hydro. On the other hand, increasing peak demand for electricity will necessitate the addition of new generation and transmission resources – the construction and operation of which has significant associated environmental and social impacts. Greater awareness of the lifecycle impacts of all energy sources, from biomass to natural gas to electricity and various transportation fuels, is critical for the overall emissions in BC to be managed effectively.

(iv) *Availability of expertise* – The diverse nature of operations among PSOs means a standard template cannot meet the needs of all. For example, although UBC can obtain significant energy savings (and GHG reductions) by slightly lowering the temperature setting of its classrooms without much impact on students, the same strategy may have adverse effects on the operations of a hospital. While some PSOs may be better equipped to assess their GHG mitigation options, there are many PSOs that do not have the internal expertise to make complex decisions involving fuel selection, capital investment, infrastructure renewal and other factors that may alter their day-to-day operations.

Recommendations

The province's "carbon neutral government" mandate has potential impacts far beyond the core operations and PSOs. Its potential can be more fully realized through the following:

i) *Review and redefine the coverage of the mandate* - The potential impact of the "carbon neutral government" mandate can be extended through widening its coverage, such as targeting scope 3 (indirect) emissions associated with the operations of PSOs. Armed with additional information on all relevant and significant emissions, it will be possible to devise more effective capital and operational campaigns to reduce total GHG emissions by PSOs in the performance of their services (the focus of the following PICS Brief, Expanding the Scope of BC's Carbon Neutral Government Mandate [BN11-31], by the authors).

ii) *Facilitation of project financing* - To encourage PSOs to make the needed investments in emissions reduction sooner rather than later, the provincial government and PSOs should explore more innovative ways to channel other sources of funding to address the financing gap faced by PSOs. It may also be necessary to review the constraints placed on some PSOs that prevent them from seeking third-party financing for capital projects, or financing capital projects using future energy savings. Additionally, it would be useful to gain a deeper understanding of the barriers faced by PSOs in trying to access existing sources of funding and provide assistance to help them overcome these. The provincial government and PSOs may benefit from a more explicit discussion on trade-offs among different objectives within the primary mission of the government and PSOs. It would also be beneficial to conduct an assessment of the implications of carbon neutrality expenditures on the provision of core services, since at some point, there will probably be a trade-off between further GHG reductions and capacity to deliver core services.

iii) *Clarification of GHG intensity of energy sources* - This is the focus of PICS Brief BN11-32.

iv) *Development of learning networks* – Some studies have shown that environmental mandates have led to increased training of government officials, better communication among them, and other spillover benefits.^{vi} Therefore, PSOs can benefit from sharing experiences, especially among those in similar situations. A better understanding of the importance of support mechanisms and learning networks in the implementation of this

mandate may prove to be crucial in overcoming barriers and catalyzing innovative solutions that will enable PSOs to achieve the desired outcomes of the mandate. The province should ensure availability of resources to fully realize the promise and positive spillovers from these learning networks.

Send relevant comments and queries to picsbp@uvic.ca and hadi.d@ubc.ca.

Acknowledgment

Funding for this work was provided by a PICS doctoral fellowship to Lau and a grant to Dowlatabadi from the National Science Foundation (SES-0345798) through the Center for Climate and Energy Decision Making (CEDM) at Carnegie Mellon University.

Sources

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^{iv} University of British Columbia. 2010. UBC Vancouver Campus Climate Action Plan 2010-2015.

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