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## Report

To: Tom Pedersen, PICS Director

From: Mark Jaccard, PICS Theme Leader, Low Carbon Emissions Economy

Date: October 5, 2009

### **Re: Funding Allocation for Research on the Low Carbon Emissions Economy**

#### Summary of Recommendations:

PICS should by October 15, 2009 submit a call for research proposals for the low carbon emissions economy with a submission deadline of December 1, 2009. Proposals should not be more than 10 pages and should include: (1) the objective, (2) the method, (3) the deliverables, (4) the timeline – 1, 2 or 3 years of funding, (5) the amount of the requested budget and its allocation among graduate students, post-docs, events, logistics, administration, etc., and (6) written proof of supplementary funding if any.

PICS should allow considerable latitude in the structure and process of these research proposals: including research by individual academic researchers or teams of researchers, collaborations with non-academic agencies or entities, and catalytic processes or events. Proposals should be complementary to the other three PICS themes (notably sustainable communities and public engagement), but full integration of research projects across themes is not essential.

PICS should emphasize its preference for proposals addressing the following needs for climate solutions:

- Improving and sustaining BC's carbon pricing initiative
- Preventing GHG emissions from BC's natural gas extraction industry
- Ensuring environmentally sound development of renewable electricity generation
- Rapidly reducing GHG emissions from BC's transportation system
- Rapidly reducing GHG emissions from BC's buildings
- Managing BC's solid wastes from urban, industrial, forestry and agricultural activities in ways that reduce GHG emissions
- Accelerating the energy efficiency trend in BC



## Background

In June 2009 I was appointed theme leader for one of the four PICS research themes: the low carbon emissions economy. My task, as I understand it, is to recommend to the PICS directors the terms of reference they should issue for motivating and then for assessing research funding submissions from academics in BC's four research-based universities. To this end, I convened a workshop on October 1, 2009 to which I invited BC academic researchers, ministry and agency officials of government, non-government organizations and industrial representatives.

At this meeting, we discussed both the process for how researchers might allocate funds from PICS and the priority areas for PICS research on the theme of the low carbon emissions economy. While I have considered all points raised at this workshop, the views expressed in this report are my own. I provide an explanation to the recommendations in the following two sections: process and research priorities.

## Process

Some participants were keen that PICS differ from the standard practices of academic granting agencies in terms of the activities and deliverables it would support. In particular, there was discussion of the desirability of PICS funds being used to support catalytic events and processes that engage major sectors of the public in ways that: (1) improve their awareness of climate risks and the benefits of reducing GHG emissions, and (2) increase their understanding of the link between the goal of climate risk reduction and the broader goal of a healthy economy (green economy, sustainable cities).

As I say in the above recommendation on process, I agree that PICS should encourage submissions of this type. However, PICS should not lose sight of the need to balance such research and engagement processes, which may be more difficult to design and execute, with highly focused research that can provide deliverables in a short timeframe while addressing well-defined issues of immediate concern to climate policy makers in government.

Thus, I recommend that PICS support both approaches, emphasizing tightly focused research in its first year or two of funding allocation while also providing seed funding for proposals that might earn larger allocations in second and subsequent years as they demonstrate the ability to develop coherent and effective catalytic processes that integrate with the work of other themes and that entice supplementary support and participation from non-PICS entities.

## Research Priorities

At the workshop there was a broad range of opinions on what should be the PICS funding priorities under the low carbon emissions economy theme. Some participants even argued that the funding should focus on sustainable communities and public engagement. However, since both of these topics are already themes that PICS intends to fund separately, I have not listed these in my recommended list. Instead, I support the wisdom of the PICS directors in creating a separate, low carbon emission economy theme, especially because there are critical topics that need to be addressed quickly and that cover areas that have distinct characteristics and thus justify a separate research focus.

Some participants also argued for funding a general category called “green economy.” However, I believe that effectively addressing each of the research areas I recommend above is what will lead to a shift of economic activity and employment creation in the direction that fits the description of the green economy. Using this general term as a subject for allocating research funds seems less helpful to policy makers than an approach to allocating funds that focuses on the specific policies urgently needed in specific topic areas to drive this transition to the so-called green economy.

At the workshop, there were compelling arguments made for several topics to be at or near the top of the priority list for funding allocation. From these suggestions, I have determined the topics in my list of recommendations. I have further determined that all have equal merits. I therefore recommend that PICS provide this list when requesting submissions for funding, but that it explain that no topic has a higher priority than another and that funding determinations will depend on all aspects of a given submission. In the following, I further explain each of the topic areas. These explanations could be provided as reference with the request for submissions that PICS would issue by October 15, 2009.

Improving and sustaining BC’s carbon pricing initiative. In the coming years, BC’s carbon tax faces challenges in the form of domestic equity concerns, industrial competitiveness concerns and harmonization difficulties with future cap and trade (and perhaps tax) systems emerging in Canada and the US. Research is urgently needed to help prepare for the next phases in its evolving carbon pricing policy.

Preventing GHG emissions from BC’s natural gas extraction industry. The expanding natural gas extraction and processing industry in BC is on a path to dramatically increase provincial GHG emissions. Policy makers urgently need help designing and implementing policies to prevent such emissions.

Ensuring environmentally sound development of renewable electricity generation. Over the past few years, BC has encouraged small-scale renewables developed by independent power producers. Most proposals thus far are for run-of-the-river hydropower projects, which have created issues in terms of transmission planning and river basin planning with respect to environmental and social impacts. This is a critical and immediate policy concern.

Rapidly reducing GHG emissions from BC’s transportation system. If BC is to achieve its GHG reduction goals, it must accelerate the rate of adoption of zero- and near-zero emission vehicle technologies for cars, trucks and other transportation modes. Provincial and local government policies are needed to this end.

Rapidly reducing GHG emissions from BC’s buildings. If BC is to achieve its GHG reduction goals, it must accelerate the rate of adoption and retrofit to zero- and near-zero emission building technologies. Provincial and local government policies are needed to this end.

Managing BC’s solid wastes from urban, industrial, forestry and agricultural activities in ways that reduce GHG emissions. A sustainable economy involves managing more than just energy flows and energy-related impacts. It also requires policies that manage solid waste flows and their impacts. Successful policies in this direction will not only improve the environment locally and regionally, but also reduce GHG emissions while creating the future jobs of the green economy.

Accelerating the energy efficiency trend in BC. Gains in energy efficiency throughout the BC economy have broad environmental and social benefits, and are associated with the shift in economic activity associated with the transition to the green economy. But energy efficiency is difficult to accelerate because of rebound effects and the ineffectiveness of the most popular policies, namely information programs and subsidies. Policy makers urgently need help with the design of policies that will have a real effect on accelerating the economy's baseline trend toward greater efficiency.