

Meetings on the Hydrogen Economy

Introduction

Our premise is that Canada and Canadians are faced with a long series of difficult decisions if we are to achieve a coherent and effective technological and institutional transition, over the coming decades, to a more sustainable low-carbon society. In response to this concern, the University of Victoria has proposed a series of workshops and other meetings with several objectives:

- To increase awareness and understanding of the many diverse challenges involved;
- To develop a continuing core network of people interested in bringing research and academic work into evidence-based processes of public debate and policy formation dealing with this transition;
- To highlight the importance of the human and institutional dimensions of technological innovation and industrial change, and to make adequate provision, in government programs supporting such a transition, for research and animation in the human sciences;
- To enhance international cooperation in development of mechanisms for knowledge management and exchange, information repositories and science archives, with particular reference to social choices among large technological systems, and with respect to low-carbon energy systems in particular.

The research program outlined below, and the associated series of domestic and international meetings are designed to pursue these goals, in three stages. In the first stage, following an initial planning workshop at the University of Victoria in October, 2005, a set of specialized research papers will be commissioned and a series of four workshops across Canada will be organized, with participating universities in each case, to develop and explore more fully the major dimensions and 'crunch issues' identified in the planning meeting as likely to be central in social decisions about energy systems. In the second stage, again on the basis of a set of commissioned papers, a series of four regional workshops will be organized to explore what lessons from Canadian and international experience can be learned and shared with respect to these issues. In the final stage, on the basis of these meetings and the supporting commissioned research papers, a series of focus groups will be organized in Canada, leading to a final consensus conference in Ottawa oriented toward lessons and summaries for policy makers in all sectors. A closing workshop will be held at the University of Victoria for a concluding review of contributions to a book building upon all the previous work and documenting the foundations for the summary for policy-makers developed in the consensus conference.

It is the first stage of this work that is the principal subject of the present proposal, in which the Social Sciences and Humanities Research Council (SSHRC), Natural Sciences and Engineering Research Council (NSERC) and the Canadian Institutes for Health Research (CIHR) and the University of Victoria, together with the four participating universities, are approaching government funders. We intend in addition to achieve substantial external private-sector funding for the purpose, both through the host universities in connection with each of the individual workshops in the first stage of the work, and more particularly for the second and third stages, in which the University of Victoria is approaching both governments in Canada and international foundations or corporate groups.

Rationale

At the request of the Social Sciences and Humanities Research Council, the Institute for Integrated Energy Systems and the Centre for Global Studies are organizing a meeting on October 16-18, 2005 at the University of Victoria to explore the political, environmental and cultural impacts on Canadian society of a transition to a hydrogen economy. In addition to canvassing the most critical public policy issues that this transition will raise, the purpose of the meeting is to begin building an ongoing network to address the governance challenges of dealing in an effective and democratic fashion with the social decisions connected with this shift to a more sustainable energy future.

The October meeting will be attended by a relatively small group of experts (40 people). A key outcome will be the definition of a number of “crunch issues” for future consultation and deliberation by widely representative groups. The workshop is intended to establish the scope and structure for a series of subsequent domestic and international meetings.

A social transition to a hydrogen economy in Canada—or more generally to some sustainable low-carbon society—will entail decisions by many actors at every stage of a three-to-five decade path of change. Such decisions will have to be made in a setting where

- the uncertainty is great,
- some consequences of those decisions may not be readily anticipated and may prove to be actually or practically irreversible,
- interpretations of the scientific foundations and technological outlook are manifold and contested,
- interests are in conflict,
- perspectives on and attitudes toward risk differ widely throughout the society, and
- the influence that can be achieved through the instruments practically available to governments is itself limited and uncertain.

How can governments in Canada best respond, nevertheless, to the responsibility to make, enable or facilitate decisions, now and from moment to moment over an extended horizon, to support, facilitate and guide the long-term technological and social transitions essential to pursuit of a more ecologically appropriate and more sustainable economy and society? What institutional structures will best promote and support informed and responsible decisions by individual, corporate and civil society actors?

Taking the concrete example of the long-term transition to a hydrogen economy as illustrative, how might the policies and mechanisms of governance be structured so that social decisions can both adapt responsively to evolving and changing circumstances and knowledge, and avoid prematurely closing off technological (or social) options before they have been fully (or at least sufficiently) assessed? More concretely, what options must be kept on the table?

The workshop series initiated by the October 2005 meeting aims overall at some of the major issues to be addressed in seeking answers to such questions of technological choice and these broader questions of governance, using the present understandings of the technological challenges associated with a transition to a hydrogen economy to ground the discussion. We seek a practical outcome from this proposed research program, for which we hope the coming October workshop will provide a design and a template, as well as identification of questions not yet on the public policy agenda or the radar screens of governments. In particular, while the outcome sought from the overall series includes some agreement on suggestions as to how federal government policies and programs such as the Hydrogen Economy Initiative and other complementary initiatives addressing challenges of climate change should be recast or restructured, the goal for the coming October workshop includes a broader environmental scan. What questions must governments acknowledge, and what structures should be put in place, so that individuals, corporations and non-government organizations, as well as governments at all scales, might address better these governance challenges and promote a more responsive, resilient and adaptive path of social action?

We are not looking for a solution to the substantive challenge of choosing an appropriate energy future, and certainly not for the development of more elegant theories of network management in the energy sector. The goal is simply to identify some practical answers to the question of how the human sciences should supplement available scientific and technological understandings in order to contribute to improved processes of decision-making relating to long range technological choices.

Thus the agenda for the October 2005 meeting is designed to provide a foundation for discussion over a subsequent three-year period, leading ultimately to some agreement on suggestions for further advancing the Hydrogen Economy Initiative—and perhaps climate change initiatives and post-Kyoto architecture in the aftermath of COP 11—to assure both scientific credibility and public legitimacy and acceptance. For this purpose it will be necessary to consider also such process-oriented questions as:

- How can governments interpret and address the apparent demand for participatory decision-making and inclusiveness generally?
- To what extent does ‘legitimacy’ have to entail inclusiveness?
- Does this condemn decision processes to a loss of scientific credibility by pandering to the responses of constituencies unable or unwilling to accept the decisions of informed and accountable decision-making bodies resting their judgments on scientifically-based risk analyses?
- Does the growing public appeal of ‘the precautionary approach’ have any significance or any value as a guideline in choices among technological options?

Parallel with this series of meetings, IESVIC and CFGS will publish and disseminate material that brings the issues related to the Hydrogen transition to a broader Canadian audience.

Proposed meeting topics and timing (tentative; to be elaborated with partners for each meeting, in light of conclusions, themes and issues identified from the initial planning workshop)

As noted at the beginning of this note, CFGS and IESVIC propose that the October 2005 workshop on the hydrogen economy should be seen as the beginning of an extended research program including a set of commissioned papers and a series of meetings extending into the fall of 2007 or winter of 2008. The rationale for developing the full series is twofold -- to allow for more detailed discussion of the key topics raised at the initial workshop, and to broaden the range of individuals and groups who can contribute to the debate. While recognizing that the focus of the subsequent meetings will be driven by questions identified at the October encounter, the following notes are intended to suggest some of the issues around which those later meetings might be organized.

1. Planning meeting with experts – October 16-18, 2005 – Victoria, British Columbia

Participations on each workshop will vary according to the topic, with the emphasis shifting among industry, civil society and government, and will include some advocacy groups, journalists, academics, think tanks, international organizations, knowledgeable

people from, First Nations, and municipal officials or organizations. The core network will attend all meetings

2. Decision-making/governance/legitimacy

- The main focus of this meeting will be the need for governments to make credible and robust decisions on complex national issues with a long time horizon, in a situation of evolving and uncertain knowledge. The discussion will include consideration of the ways in which scientific knowledge can be effectively brought to bear on policy formulation and decision. It will also seek to deal with practical approaches to managing risk and pursuing adaptive management in the context of social decision-making.
- A critical part of this meeting will address the question of who (individuals, organizations, governments) has to participate in national decision-making (and for how long) to give the process and the outcomes legitimacy. Broadening the access to decision-makers and enhancing the systems they rely upon are likely to be recurring themes.
- The meeting may consider alternative decision-making models which might be adapted to suit the issues raised with respect to sustainable national energy policy/programs in general and the application of hydrogen-related technology in particular.

3. Risk perceptions, public understanding, participation and technology

- The main focus of this meeting is the role which the (unorganized) public and the various components of civil society should play in a national debate over the long-term transition to a hydrogen economy (or towards a more sustainable low-carbon economy). Representatives of industry and government would join a range of non-governmental actors for this discussion, which might emphasize the ways in which differing perceptions of risk and distributional consequences should play into technological choices on behalf of citizens by governments at different scales.
- The meeting could begin with a review of the main substantive concerns which civil society groups have. Participants could discuss the possibility of injecting non-standard models of economic development into the debate. Central to this should be discussion of the practical implications of a national commitment to “sustainability”, however defined.
- The meeting could consider the results of a focused survey of public attitudes towards energy issues conducted immediately prior to the event. Among the issues to be tested in such a survey might be the question of how much lifestyle change Canadians are prepared to countenance in the interests of developing a more environmentally sustainable economic system.
- The participants should be drawn sufficiently widely so that the different regional interests and concerns across Canada can be brought into the conversation.

4. Federal-provincial relations, government programs and regulatory issues

- The main focus of this meeting is the relationship between the private sector companies engaged in developing commercial applications of hydrogen-related technologies and the various levels of government. The meeting will be attended by academic and civil society representatives as well as by industry and government.
- A central issue will be whether governments should play a direct role at all, or whether the market should primarily be relied upon to generate an appropriate “suite” of energy options. Assuming a relatively active government role, participants could consider what steps the federal, provincial and municipal governments should be taking to support commercial efforts. This might include an assessment of the regulatory environment which should be developed by governments and the tools which government might find most effective (example: regulation, direct subsidy, indirect incentives through taxation and pricing).
- Participants would want to reflect on how the various energy industries (oil/gas, hydro, coal, nuclear, alternative fuels) inter-relate, on how hydrogen fits into the mix of available energy alternatives over the next two to five decades, and on how the composition of the overall portfolio of energy-related activities is likely to evolve as a result. In this broader context, the question could be discussed of what characteristics the hydrogen-related industries have which warrant special treatment by governments, and how best those industries might present options for governments to consider.
- Another key set of issues will concern the federal-provincial and interregional dimensions. The group may wish to review the respective statutory and regulatory roles of the federal and the provincial governments, and how a positive federal-provincial dynamic can be developed in light of these varying respective responsibilities. Specific regional considerations related to the industrial base and energy endowments of specific provinces will need to be kept in mind. Some particular challenges facing governments (example: economic versus environmental considerations, national versus continental perspectives) could be addressed.

5. Local impacts, local governments and cross-sectoral demonstration projects: Confronting NIMBY?

6. International meetings –2007/8

- The plan is to organize four meetings in this period to explore the experiences, perceptions and premises of other countries in dealing with hydrogen-related issues. In some cases, other countries may have actually started to implement policies and programs which are only under consideration in Canada. In other cases, countries may face conditions which Canada will wish to ensure it avoids. A central theme will be how other jurisdictions are defining and coping with the relevant social risks and technological approaches likely to be encountered in a transition to a more sustainable low-carbon society. A particularly fruitful possibility will be to organize these meetings in partnership with similar extended research projects already underway in the EU, UK, Netherlands and other countries.
- The first international meeting will take place in Palo Alto, California and include participants from the United States and Mexico. In addition to discussing activities being undertaken in these two countries, the meeting will consider the continental dimension of the evolution towards hydrogen.
- The second meeting will be in Asia (Singapore or India), and will focus on recent hydrogen-related developments in the main Asian economies.
- The third will be in Brussels – this will focus on developments in European countries where policy and program development is ahead of that in Canada.
- The fourth is planned tentatively to be in Yellowknife. It will deal with the situations faced by rural and isolated communities, whether in Canada or in the developing world.

7. Focus group meetings—early 2008

- A commissioned series of focus group meetings (perhaps along the lines of the Fishkin deliberative polling model), ideally in the context of a comparative study, would explore public perceptions and reactions in more detail.
- The purpose of these meetings will be to elicit an appreciation of the range of views and opinions of ordinary Canadians on the issues identified in the previous meetings in a way more reliable than surveys, given the complexity, uncertainty, and technical nature of the options under consideration.

8. Consensus conference – September 2008-Ottawa

This larger meeting aimed at a full summary policy makers will review the views and information generated in the previous meetings and in the broad series of commissioned reviews and focus groups just mentioned. It will afford an opportunity for leaders in government, the private sector and civil society to address the key issues raised in the previous two years of work, in the light of careful professional assessments of public perceptions of these issues. A particular concern will be to draw the lessons suggested in that prior discussion for the evolution of the Hydrogen Economy Initiative toward an ongoing process that will reflect both the desirable features of deliberative decision-making and the practical necessities of timely adaptive action leading to resilient energy systems robust against unpredictable shocks. Consensus will be sought on options to keep open and some productive directions to pursue.

9. Drafting workshop – November 2008 - Victoria

This final meeting in the current series will bring together the core network and other experts in a working session to review papers to be included in an edited volume summarizing the foundations of evidence supporting a full summary for policy makers emerging from the series overall.

Deliverables

A number of distinct ‘deliverables’ and be identified as flowing from this work.

- A core network of committed participants who could act as an informal forum to promote more effective public education, deliberation and participatory decision processes;
- From each of the domestic and international workshops, a brief report to industry, government and civil society partners, both summarizing ideas for action in the near term and articulating more fully the dimensions of the overall decision problems to be faced;
- A collection of commissioned research papers
- From the consensus conference, an informed and accessible summary for policy makers reflecting current assessments of the present state of play in technological challenges as well as academic work on the flow of science into processes of policy formation;
- From the final workshop, a book articulating that summary for policy makers and the foundations of evidence, synthesis and interpretation on which it is built;
- In association with the ongoing discussion process, development of an information repository and knowledge management capability for open access and dissemination of the documents and information relevant to that discussion process.

Note:

A very rich array of research is opened up if it is possible to organize focus group work as well as the consensus conference as part of a coordinated comparative study drawing on parallel initiatives in other countries and the EU. In the most ambitious scenario, an exercise comparable to the 10-arena five-year Social Learning Project coordinated by Bill Clark at Harvard, though much smaller in scale, could be developed. Such an exercise could then build on the results of that Social Learning Group work as published by MIT Press in a two-volume release in 2001, as well as on the subsequent extended Harvard-based project on Global Environmental Assessment working from that. The present exercise thus could build on that foundation to draw the lessons appropriate to the particular case of social choices of large scale energy systems. A proposal for a cross-arena comparative study of this kind must be the subject of a separate proposal, currently in preparation for later discussion.

ARD

Excerpt REV 4

October 14, 2005