

Applicant PIN + Family name on top of each page

Partnership Workshops Program Proposal: Sustainable Energy Futures for Halifax

Rationale for the Workshop

The rationale for the workshop is to develop a research agenda for scenario analysis on sustainable energy futures for Halifax. Research stemming from this workshop will provide insight into sustainable energy for Canadian and international cities, timely research in the face of profound transformations in cities, resources, and climate. A new provincial policy that has committed Nova Scotia to providing 25% of electricity from renewable sources by 2015 reinforces the need for research into sustainable energy sources. The proposed research will contribute to Nova Scotia's commitment by exploring ways of making Halifax a leader in renewable energy. In order to do so, workshop participants will explore the following questions: *"If we are serious about making our energy future more sustainable in the next several decades (say, to 2050), what kinds of things do we need to do, and are we prepared to do, in the short term to put us on a promising path? Can we define sensible policy options for energy developments in Halifax in the face of huge uncertainties in the key driving forces associated with global energy?"* Stemming from these questions, research priorities will be established as they relate to city planning, environmental law and policy, energy consumption, and sustainable/renewable energy solutions that would see cities transition towards a low-carbon economy.

In addition to advancing cities' understanding of renewable energy issues, this workshop will serve as a contribution to the scholarly literature on scenario analysis. Scenario analysis is a process of creating and analyzing a set of alternative futures for a system of interest (Schwarz 1991; Cornish 2004). The idea behind scenario analysis is to examine one's preparedness either to weather potentially difficult future situations or to take advantage of emerging opportunities. For example, emergency measures organizations engage in scenario analysis all the time - they simulate a hurricane or nuclear accident, play it through, and see how well society copes given the responses. If poorly, then the imperative is to improve preparedness. The same basic approach can be used to understand better how we might make significant societal transitions given huge uncertainties both within the system of interest and in its context. A study on sustainable energy futures in Halifax will explore how scenarios are used in determining resource-related futures and look in depth at the issue of renewable energy and energy security. To construct the scenarios, social and biophysical information will need to be compiled and synthesized, thus furthering the understanding of issues surrounding energy in Canada and abroad.

The workshop will also establish collaborations among Dalhousie and international scholars and staff at the Halifax Regional Municipality (HRM). An existing collaboration exists between scholars at the College of Sustainability (Dalhousie University), the School for Resource and Environmental Studies (Dalhousie University) and staff from HRM as part of the World Energy Cities Partnership (WECP). The WECP is a collaboration between leading global energy cities that "...encourages the exchange of energy industry knowledge and economic and infrastructure development strategies" (World Energy Cities Partnership, 2009, par. 2). The workshop will enhance Halifax's participation in and contribution to the WECP and will provide insight into research that other Canadian and foreign cities may wish to explore. Ultimately, new collaborations will result in innovative ideas and advanced understanding of energy issues as they relate to cities, people, policy, the environment and sustainability, and how together, we can work toward sustainable energy futures.

Applicant PIN + Family name on top of each page

Identity and Roles of the Workshop Leaders

Peter Duinker, Director, School for Resource and Environmental Studies; Associate Dean Research, Faculty of Management. Over the past 30 years, Dr. Duinker has organized and led hundreds of workshops on resource and environmental management for academics, practitioners, professionals, stakeholders and others.

Deborah Buszard, Director Research and Outreach, College of Sustainability, Dalhousie University. During her thirty year career Deborah Buszard has organized numerous conferences, symposia and workshops. She currently serves on several research coordination bodies including the NS Offshore Energy Technical Research Association Program Management Committee and the NS Dept. of Agriculture Technology Development 2000 Selection Committee. She received the NSERC Synergy Award, for Faculty-Industry research collaboration, in 2001. A copy of her CV is attached to this application

Julian Boyle, Energy Manager, Halifax Regional Municipality. Julian Boyle leads a team that works inter-departmentally within the municipality and with external stakeholders to implement corporate and community best practices in energy. He has led the concept development, financing and implementation of over \$10M in energy efficiency and renewable energy initiatives for the municipality. These include initiatives such as the city's first energy performance contracts, the use of biodiesel in HRM's bus fleet, the Alderney 5 project – a world's first geothermal cold energy storage system, the city's adoption of LEED for all new construction, the incubation of district energy, and recently the community focused Solar City initiative. He is an active leader in shaping municipal and provincial energy policy through legislative, bylaw and regulatory processes. He has provided testimony and evidence in numerous Nova Scotia regulatory hearings for gas and electricity markets over the last 10 years. A copy of his CV is attached to the application.

Workshop Participants

Dalhousie University Participants

Michelle Adams, Assistant Professor, School for Resource and Environmental Studies; Director, Eco-Efficiency Centre, Faculty of Management. *Research interests: industrial ecology, sustainable business, green technologies, maximizing energy- and resource-use efficiencies*

Peter Allan, Professor, Mechanical Engineering. *Research interests: energy, solar, thermal*

Meinhard Doelle, Associate Professor, and Associate Director, Marine & Environmental Law Institute, Schulich School of Law. *Research interests: environmental law including climate change, energy law, invasive species, environmental assessments, public-participation in decision-making*

Graham Gagnon, Professor, Canada Research Chair in Water Quality & Treatment, and NSERC/HRWC Industrial Research Chair, Department of Civil Engineering, Faculty of Engineering *Research interests: water quality, treatment, solid waste management, systems analysis*

Martin Gibling Professor, Department of Earth Sciences, Faculty of Science. *Research interests: sedimentary geology, economics and petroleum*

Jill Grant, Professor, School of Planning. *Research interests: residential environments, planning suburbs, scenario-planning, new urbanism, gated communities, health and the built environment*

Eldon Gunn, Professor, Industrial Engineering, Faculty of Engineering. *Research interests: manufacturing, forestry, fishing, mining, linear programming, modeling, natural resources, operations, optimization, production planning, tidal power*

Applicant PIN + Family name on top of each page

Andrew Henry, Director, Carbon Storage Research Consortium. *Research interests: renewable energy, carbon storage, marine energy*

Frank Palermo, Professor, School of Planning, School of Architecture, Director of the Cities and Environment Unit. *Research interests: urban design, First Nations community planning*

Peter Tyedmers, Associate Professor, School for Resource and Environmental Studies, Faculty of Management. *Research interests: life-cycle assessment, energy analysis, ecological footprint analysis, eco-efficiency of food production systems*

Jeff Wilson, Interdisciplinary PhD Program. *Research interests: ecological economics, ecological footprint, energy analysis*

Community Partners

Dana Atwell, Director of Environmental Affairs, Nova Scotia Power

Rob Bennett, President and CEO, Nova Scotia Power

Deborah Carver, Executive Director, East Coast Environmental Law

Murray Coolican, Deputy Minister of Energy, Nova Scotia Government

Alain Joseph, Applied Energy Research, Nova Scotia Community College

Peter Kelly, Mayor of Halifax. *Member of the WECP.*

Richard MacLellan, Manager, Sustainable Environment Management Office, Halifax Regional Municipality

Robert Niven, President, Carbon Sense Solutions

Nancy Phillips, Director, Investment and Trade, Greater Halifax Partnership

Jim Simmons, Senior Engineer and Associate, Stantec

Roger Wells, Supervisor, HRM Regional Plan, Halifax Regional Municipality

John Woods, Vice-President for Energy Development, Minas Basin Pulp and Power

Non-Dalhousie University Academics

Members of the WECP Academic Partnership group will be invited to participate

Plans for Workshop Organization

Anticipated workshop dates: Fall 2011, location: Dalhousie University. Most participants will be from the Halifax Regional Municipality but some will be traveling from out or province/country. Administrative support for preparing workshop materials, planning and executing the workshop will be provided by graduate research assistants and/or associates at Dalhousie University.

Proposed Workshop Activities

Day and Time	Activity	Outcome	Leader	Contributor
Day 0				
1800-2200 hr	Dinner and introductions	Understanding of perspectives	Buszard	All
Day 1				
0800-0830 hr	Breakfast	Sustenance		All

Applicant PIN + Family name on top of each page

0830-1000 hr	Overview; What knowledge do cities need to address the energy challenges of the future? Concept presentations	Common understanding of objectives, vocabulary, concepts	Buszard	Buszard; Duinker; Boyle
1000-1030 hr	Nutrition break	Personal health		All
1030-1200 hr	What new perspectives can contributors bring?	Understanding of interests and capabilities of invited researchers	Duinker	All researchers
1200-1330 hr	Lunch and exercise	Sustenance		All
1330-1500 hr	What are the energy issues driving-forces? Exercise and plenary	Common understanding of forces driving change associated with cities' energy situations to 2050	Duinker	All
1500-1530 hr	Nutrition break	Personal health		All
1530-1700 hr	What research questions need to be answered to address driving forces? (breakout groups)	Determination of specific research needs to define driving forces of cities' future energy situations	Buszard; Duinker; Boyle	All
1800-2200 hr	Dinner and networking	Sustenance and relationships		All
Day 2				
0800-0830 hr	Breakfast	Sustenance		All
0830-1000 hr	Reports to plenary, discussion	Shared understandings of research needs associated with the drivers; agenda for driver research	Duinker	All
1000-1030 hr	Nutrition break	Personal health		All
1030-1200 hr	Response-themes identification (plenary)	Common understanding of how scenarios will portray a city's energy situation in 2050	Duinker	All
1200-1330 hr	Lunch and exercise	Sustenance		All
1330-1500 hr	What are the research needs around response themes? (breakout groups)	Determination of specific research needs to define response themes for cities' future Energy situations	Buszard; Duinker; Boyle	All
1500-1900 hr	Tour city infrastructure and energy related projects	Information and idea sharing		All
1900-2200 hr	Dinner and networking	Sustenance and relationships		All
Day 3				
0800-0830 hr	Breakfast	Sustenance		All
0830-1000 hr	Reports to plenary, discussion	Shared understandings of research needs associated with the response themes; agenda for response-theme research	Duinker	All
1000-1030 hr	Nutrition break	Personal health		All

Applicant PIN + Family name on top of each page

1030-1200 hr	Theme-based working groups determine collaborative research agenda	Agreements and agendas for collaborative funding proposals	TBD	All
1200-1330 hr	Lunch	Sustenance		All
1330-1500 hr	Reports to plenary, discussion of research program overview and plans for stakeholder engagement; workshop conclusions	Shared understanding of agreements and agendas for collaborative funding proposals and agreements to proceed with a research program composed of multiple projects and collaborations	Duinker	All
1500 hr	Out-of-town guests depart			

Expected Workshop Outcomes

Expected workshop outcomes include 1) the establishment of research priorities on sustainable energy futures, 2) an agenda for research program development, and 3) new partnership collaborations between scholars at Dalhousie, other Canadian and international universities and Halifax municipal staff. Next steps include conducting scenario analysis workshops where scenario themes and construction will be discussed. Possible funding that will be pursued as a result of this workshop include NSERC's Strategic Project Grants Program, Green Municipal Fund funding (applied for by HRM), Innovative Communities Fund/Atlantic Innovation Fund funding from Atlantic Canada Opportunities Agency, SSHRC Partnership Development Grant, and/or funding from the European Union for collaborations with European partners.

References

Cornish, E. 2004. *Futuring: The Exploration of the Future*. World Future Society, Bethesda, MD.

Schwartz, P. 1991. *The Art of the Long View: The Path to Strategic Insight for Yourself and Your Company*. Doubleday, New York, NY.

World Energy Cities Partnership. 2009. *Worldwide Support Network*. Retrieved November 15, 2010 from <http://www.energycities.org/>