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EMRG News

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Electric Vehicles, Consumers and the Market

By Dr. Jonn Axsen

Market penetration of emerging pro-environmental technologies ultimately depends on consumer perceptions, preferences and valuation. To better understand this process, Dr. Jonn Axsen, along with Caroline Orlebar and Stephen Skippon, recently completed a study investigating the role of social influence in consumer preference. The study, titled, “Social influence and consumer preference formation for pro-environmental technology: The case of a U.K. workplace electric-vehicle study”, was published in August in Ecological Economics.

In this study 57 employees of a UK based company participated in an electric vehicle experience project, and 21 of these participants followed up with a semi-structured interview to investigate how their perceptions and preferences regarding Battery Electric Vehicles (BEV) were shaped through processes of social influence. The study categorized social influence according to three processes: 1) diffusion, i.e., the sharing of BEV-related information, 2) translation, i.e., the discussion of uncertain BEV benefits and drawbacks; and 3) reflexivity, i.e., the relating of BEV technology to self-concept.

The findings suggest that, while diffusion and translation are more common processes, consumer perceptions are, in part, influenced by social negotiation of meaning, lifestyle and identity, i.e., reflexivity. This implies that research ignoring social influence will underestimate the potential for shifts in consumer preferences regarding emerging pro-environmental technologies such as BEVs.

Interview with Mark Jaccard

By Derek Peters

Q. I understand that you have some involvement in the recent attempt by Forest Ethics Advocacy and Donna Sinclair to sue the National Energy Board and the Canadian Government over new rules of the NEB with respect to public participation in its review process.

A. Yes, especially with respect to the upcoming NEB review of the reversal of Line 9 in Ontario so that it would transport oil from west to east instead of east to west. This reversal would enable oil from the oil sands to reach refineries and ports on the Atlantic seaboard.

Q. What are the new rules?

A. I have not looked carefully at these, but apparently they require people to fill out a lengthy questionnaire that the NEB will use to decide if they get standing in this review. There is a concern that the NEB might restrict people who want to talk about the full environmental impacts from expanding fossil fuel infrastructure.

Q. What is your role?

A. Through their lawyers, Clayton Ruby and Nader Hasan, the plaintiffs asked me to provide an affidavit that explains the link between oil pipelines and climate change. My affidavit, which is now available on my blog (http://markjaccard.blogspot.ca), lays out a simple line of evidence and logic. It goes like this.

(1) Earth scientists warn us against driving global temperatures 2 C or more above pre-industrial levels.
(2) Stephen Harper and other global leaders have committed to prevent this from happening.

(3) The biggest driver of climate change is carbon pollution from burning fossil fuels.

(4) In spite of Harper's promise, the Canadian government, under his leadership, is aggressively promoting the expansion of oil sands and the infrastructure (such as pipelines) needed to get it to market.

(5) Yet leading independent energy-economy modelers (my area of expertise) consistently show that we need to stop the growth of fossil fuel production and start to phase it down or phase in carbon capture and storage - one or the other.

(6) This is why, in a study of global climate targets and the Alberta oil sands, an MIT research team noted, "The niche for the oil sands industry is fairly narrow and mostly involves hoping that climate policy will fail."

(7) The NEB mandate includes consideration of the environmental impacts of projects it reviews. Given all of the above, the greatest impacts from expanded oil pipelines that foster expanded oil sands production are due to climate change. This will affect all environments in Canada.

(9) I am not a lawyer, but I did chair the BC Utilities Commission for 5 years, which included regulation of the TransMountain oil pipeline in BC (now called the Kinder Morgan pipeline). Our act has language similar to that of the NEB when it comes to reviewing projects. Personally, I don't see how the NEB would claim to assess the environmental impacts of oil pipeline expansion or reversal without looking at climate change. This is by far the most important environmental impact.

But these are crazy times. Humans are in massive delusion about further fossil fuel development - fueled in large part by the money that can still be made as long as our policies are not phasing out the burning of fossil fuels.

This past summer, EMRG’s second year graduate students...

Cogeneration Database to Receive an Update

By Dr. John Nyboer

Since 1993, CIEEDAC has acted on behalf of Canadian industry and energy suppliers as a third-party independent reviewer and analyst of relevant data on production, energy use and supply, and GHG emissions with the objective of making these data reflective of current industry and supply activities. This included information on cogeneration in Canada, a data gap in Canadian statistics on its energy system. CIEEDAC published the first version of A Review of Cogeneration Facilities in the Canadian Industrial Sector in March 1999. The report was expanded over the following decade to include residential, commercial/institutional and district energy cogeneration systems.

Initially, CIEEDAC relied on secondary data sources to identify cogeneration facilities and compile data on their characteristics. Between 2000 and 2008, CIEEDAC gathered data on cogeneration systems directly from the system operators via an electronic survey. The data collected are posted on CIEEDAC’s website at www.cieedac.sfu.ca.

Interested parties can access non-confidential data on cogeneration systems operating in Canada and generate reports by industry and region. To date, no other comprehensive list of Canadian cogeneration projects has been identified.

The cogeneration survey and database were primarily funded by Natural Resources Canada and Environment Canada. Unfortunately, funding cuts have prevented CIEEDAC from continuing its survey activity and curtailed its annual updates of the database. The data on cogeneration in Canada is in danger of growing severely out of date.

CIEEDAC receives numerous requests for data on cogeneration from industry, international agencies and a number of consulting firms. This, along with recent renewed interest in cogeneration and district energy activity in Canada, sparked some funding activity from both government and non-government agencies on the database front to allow some progress to be made on the updating and further development of both the old cogeneration database and a new district energy database. CIEEDAC hopes to release a report on both of these by the end of March, 2014.

First International Year of Statistics

During 2013, at least 2,100 agencies and organizations worldwide are participating in events to celebrate the First International Year of Statistics. Why have such a celebration? Because so many facets of our life – from the food we eat to the medicines we take to the energy we use – are affected by statistics. And this includes a number of Canadian institutions...

EMRG Scholarships

Derek Peters, James Hoffele, and Maxwell Sykes all received Joseph-Armand Bombardier Canada Graduate Scholarships from the Social Sciences and Humanities Research Council (SSHRC). Derek’s project is investigating the sociopolitical obstacles and opportunities of smart grid development in BC, James is studying the demand and production of fossil fuel sources under global market-based policy scenarios to meet climate targets, and Maxwell is reviewing California's Zero Emission Vehicle Regulation, determining what a similar supply mandate in BC should look like, and assessing how to make it politically feasible.

Maxwell also received the Chad Day Fellowship, valued at $4,700. Chad Day was REM's founding director and is one of REM's three Professor Emeritus.
as well, including Statistics Canada (STC). They have planned a number of events including a series of panel discussions on various dimensions of statistical data.

STC asked CIEEDAC’s Dr. John Nyboer to participate in such a panel discussion, focused naturally on “Energy Data in Canada”. The event took place in Edmonton, AB, on September 10 with over 80 participants. Wayne R. Smith, Chief Statistician of STC, highlighted the data work STC undertakes each year in an effort to provide good energy data on Canada as a major player in the global energy sector.

Along with 4 other panel members from different areas of the energy spectrum, Dr. Nyboer addressed questions on:

Critical Issues in Energy Data: What needs to be done to maintain an appropriate data set on energy into the future?

Sharing of Data Resources in Canada: With whom can STC interact and partner so as to maintain a consistent comprehensive data set that does not increase respondent burden.

How can STC become a hub of energy data for Canadians? Among other things, Dr. Nyboer addressed concerns related to the confidentiality of data on energy in its generation and end use, gaps in the data (see cogeneration article, p2) and the various other sources of data that exist in Canada.

For more on the International Year of Statistics, see www.statistics2013.org

New EMRG Students

Dominique Atherley
Dominique joins EMRG after completing her undergraduate degree in Environmental Science at the University of Redlands in Redlands, California. Originally from Bainbridge Island, Washington, Dominique is excited to return to the Pacific Northwest. She hopes to develop a greater understanding of energy systems, policies, models and infrastructure through her involvement in EMRG. Outside of school, Dominique plays volleyball and is an avid fan of Manchester City, the Seattle Sounders and the Seattle Seahawks.

Kaitlin Boyd
Grew up in Kamloops, BC and completed her undergrad in Economics and Political Science from Thompson Rivers University. For the past two years she has been working as the Sustainability Coordinator for TRU. Kaitlin is very excited to have the opportunity to join EMRG and is looking forward to learning as much as she can while exploring the lower mainland.

Joshua Cairn
Joshua is joining EMRG after completing an undergraduate degree in Geography and GIS from Simon Fraser University. Having worked for Sustainable SFU and B.C. Wildlife Federation in the past, he is well-grounded in current sustainability and conservation issues. Joshua is excited to utilize his skills and experience in the REM program, and is looking forward to working with Dr. Jonn Axsen to explore behavioural aspects of electric vehicle ownership.

PhD Defense of Rose Murphy

Her defense will be the morning of the 25th and Hillard Huntington, the Executive Director of Standford’s Energy Modelling Forum (EMF), will be giving a talk at SFU in the afternoon. Everyone is welcome to come and share this day with Rose.

On Monday November 25th, Rose Murphy’s will defend her PHD research titled – “Use of Empirically-Based Models to Evaluate the Potential of Energy Efficiency and Forest Carbon Sequestration for Mitigating Climate Change” Rose’s research investigates the potential for policy to accelerate improvement in energy efficiency and increase carbon sequestration in forests. Rose’s models incorporate empirically estimated behavioral parameters and have the capability to (where necessary) take into account feedback effects within the economy. She has separated her research into 3 papers.

Paper 1: Modeling efficiency standards and a carbon tax: Simulations for the U.S. using a hybrid approach

Paper 2: Energy efficiency and the cost of GHG abatement: A comparison of bottom-up and hybrid models for the US

Paper 3: An econometric analysis of afforestation offsets for carbon sequestration

Rose’s committee includes: Mark Jaccard (senior supervisor), Dominique Gross (supervisor, School of Public Policy, SFU), Nancy Olewiler (supervisor, School of Public Policy, SFU), Jonn Axsen (internal examiner), and Hillard Huntington (external examiner, Stanford)
Justin Lepitzki
Justin grew up in Vancouver and completed his Bachelor of Business Administration at Simon Fraser University. He studied Finance and Economics at the undergraduate level. Of particular interest to him was the field of environmental economics, which led Justin to the REM program. He is looking forward to working with the CIMS model to assess the impacts of BC’s low-carbon fuel standard and how it might affect the adoption of clean energy vehicles. Justin is excited to join EMRG and REM in hopes of better understanding sustainable energy systems and effective public policy. In his spare time, Justin enjoys fishing, shooting, ice hockey and snowboarding.

Brad Langman
Brad’s undergraduate degree was in political science here at SFU. He has come back to the mountain, and to EMRG specifically, in order to further pursue his interest in sustainable public policy. He is a qualitative researcher focusing on pro-environmental behaviour and relationships with technology and institutions. He finds writing of himself in the third person amusing and dreams of sailing around the globe before retiring to a hammock to read fiction.

Anita Sun
Anita was originally born and raised in China, and came to Vancouver with her family at the age of 13. She completed her undergraduate studies at UBC with a specialization in environmental chemistry. As a chemist, she had worked on several projects including: validation and testing of plate and membrane designs for hydrogen fuel cells, analysis of persistent organic pollutants in foods, as well as analysis of atmospheric aerosols to understand their roles in affecting climate change. Over this time, she has developed a personal interest and concern for environmental issues relating to climate change. She has also come to understand that the wide range of environmental issues relating to climate change stem from the lack of a sustainable and clean energy source. She then began seeking opportunities for an integrated and multi-disciplinary training, and became deeply attracted by the REM-EMRG. Anita is very excited to be a part of the EMRG, and is looking forward to the immense learning opportunities it offers. In her spare time, she enjoys reading, playing the piano, travelling, and simply spending time with family and close friends.

Lejla Uzicanin
Lejla Uzicanin comes to REM/EMRG with international consulting/advising experience in a range of energy sector projects, working with energy sector institutions, Governments, and International Organizations in Southeast and Eastern European countries. Her experience includes work with South-East Europe regional energy market, restructuring of electricity sectors and development and harmonization of legislation in accordance with the relevant European Union Directives regarding electricity, energy efficiency and renewable energy.

She holds a BSc Administration and Management Degree from La Roche College, Pittsburgh USA and MBA Degree from Cass Business School, City University, London, UK and is very excited to start a new learning journey with the EMRG group. Lejla’s interest include reading, dancing, travel, movies, and cooking experiments using recipes collected during her travels.