

JONN AXSEN, Ph.D.

School of Resource and Environmental Management
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EDUCATION

Ph.D., Transportation Technology and Policy, University of California, Davis, 2010.

Dissertation: Interpersonal influence within car buyers' social networks: Observing consumer assessment of plug-in hybrid electric vehicles (PHEVs) and the spread of pro-societal values.

Advisor: Dr. Kenneth S. Kurani, Dr. Thomas Turrentine and Prof. Daniel Sperling.

Master of Resource Management, Simon Fraser University, Vancouver, Canada, 2006. Thesis: Combining stated and revealed choice research to inform energy system simulation models: The case of hybrid-electric vehicles. Advisor: Prof. Mark Jaccard and Prof. Dean Mountain.

Bachelor of Business Administration, First class honors, Simon Fraser University, Vancouver, Canada, 2004.

RESEARCH INTERESTS

- Environmental attitudes, preferences, values and lifestyle
- Consumer purchase and use of energy-using technologies
- Diffusion of innovations, social networks and interpersonal influence
- Technological change and energy-use modeling
- Energy and environmental policy and impacts
- Alternative-fuel infrastructure, recharging behavior, and grid interactions
- Ecosystems services and environmental valuation

RESEARCH SKILLS

- Behavioral research methods: consumer surveys and interviews; social network mapping, analysis and observation.
- Simulation modeling: energy-economy models, discrete choice models, and integration across models.
- Quantitative analysis: continuous and categorical statistics; linear and logistic regression; factor and cluster analysis.
- Qualitative analysis: narrative and content analysis.
- Risk and uncertainty: decision analysis; Monte Carlo; Bayesian; sensitivity analysis.
- Policy analysis: quantitative and qualitative tradeoffs.
- Life-cycle impact assessment: quantifying and comparing impacts.
- Management: economics; finance; business strategy; human resources.

ACADEMIC POSITIONS

Assistant Professor, Simon Fraser University, 8/11 – present.

Post-Doctoral Research, UC Davis, 7/10 – 7/11.

Doctoral Research, UC Davis, 3/07 – 6/10.

Research Associate, Canada Industrial Energy Data Center (CIEEDAC) and MKJA & Associates Consulting, 5/04 – 3/07.

Masters Research, Simon Fraser University, 9/04 – 9/06.

PEER-REVIEWED PUBLICATIONS

[Journal impact factors and journal ranking (for each field) cited from Journal Citation Reports (JCR) where available]

Published/Accepted

1. **Axsen, J.**, and K.S. Kurani (In press). Developing sustainability-oriented values: Insights from households in a trial of plug-in hybrid vehicles, *Global Environmental Change*, accepted August 2012 [2011 JCR = **6.9**, #1/89 in Environmental Studies]
2. **Axsen, J.**, J. TyreeHageman, and A. Lentz (2012). Lifestyle practices and pro-environmental technology, *Ecological Economics*, 82, 64-74. [2011 JCR = **2.7**, #18/320 in Economics, #6/89 in Environmental Studies]
3. **Axsen, J.**, and K.S. Kurani (2012). Social influence, consumer behavior and low-carbon energy transitions, *Annual Review of Environment and Resources*, 37. [2011 JCR = **6.4**, #2/89 in Environmental Studies]
4. **Axsen, J.**, and K.S. Kurani (2012). Who can recharge a plug-in electric vehicle at home? Submitted to *Transportation Research Part D: Transport and Environment*, 17(5), 349-353. [2011 JCR = **1.7**, #9/24 in Transportation]
5. **Axsen, J.**, and K.S. Kurani (2012). Interpersonal influence within car buyers' social networks: Applying five perspectives to plug-in hybrid vehicle drivers, *Environment and Planning A*, 44(5), 1047-1065. [2011 JCR = **1.9**, #22/89 in Environmental Studies]
6. **Axsen, J.**, K.S. Kurani, R. McCarthy and C. Yang (2011). Plug-in hybrid vehicle GHG impacts in California: Integrating consumer-informed recharge profiles with an electricity-dispatch model, *Energy Policy*, 39(3), 1617-1629. [2011 JCR = **2.7**, #5/89 in Environmental Studies]
7. **Axsen, J.**, and K.S. Kurani (2011). Interpersonal influence in the early plug-in hybrid market: Observing social interactions with an exploratory multi-method approach, *Transportation Research Part D: Transport and Environment*, 16(2), 150-159. [2011 JCR = **1.7**, #9/24 in Transportation]
8. **Axsen, J.**, and K.S. Kurani (2010). Anticipating plug-in hybrid vehicle (PHEV) energy impacts in California: Constructing consumer-informed recharge profiles, *Transportation Research Part D: Transport and Environment*, 15(4), 212-219. [2011 JCR = **1.7**, #9/24 in Transportation]
9. **Axsen, J.**, K.S. Kurani, and A. Burke (2010). Are batteries ready for plug-in hybrids buyers? *Transport Policy*, 17 (3), 173-182. [2011 JCR = **1.7**, #8/24 in Transportation]
10. **Axsen, J.**, and K.S. Kurani (2009). Early U.S. market for plug-in hybrid electric vehicles: Anticipating consumer recharge potential and design priorities, *Transportation Research Record: Journal of the Transportation Research Board*, 2139, 64-72. [2011 JCR = **0.5**]
11. **Axsen, J.**, D. Mountain, and M. Jaccard (2009). Combining stated and revealed choice research to simulate the "neighbor effect": The case of hybrid-electric vehicles, *Resource and Energy Economics*, 31 (3), 221-238. [2011 JCR = **1.2**, #91/320 in Economics]

Manuscripts under review

12. **Axsen, J.**, and K.S. Kurani (Revise and resubmit). Social influence and sustainable consumption: Integrating diffusion, translation and reflexivity processes. Submitted to *Environment and Planning B*. [2011 JCR = **0.8**]
13. **Axsen, J.**, C. Orlebar, and S. Skippon (Revise and resubmit). Observing social influence and consumer preference formation: The case of a U.K. workplace electric-vehicle trial. Submitted to *Ecological Economics*. [2011 JCR = **2.7**, #18/320 in Economics, #6/89 in Environmental Studies]
14. **Axsen, J.** and K. Kurani (Submitted). Hybrid, plug-in hybrid or electric—what kind of electric-drive vehicles do consumers want? Submitted to *Energy Policy*. [2011 JCR = **2.7**, #5/89 in Environmental Studies]
15. **Axsen, J.** and K. Kurani (Submitted). Connecting plug-in vehicles to green electricity through consumer demand: A survey of U.S. new car buyers, Submitted to *Environmental Research Letters*.

Works in progress

16. Kurani, K., N. Caperello, A. Bedir, and **J. Axsen** (Draft). Can markets for electric vehicles and green electricity accelerate each other? Initial conversations with consumers. To be submitted to *Transportation Research Part A: Policy and Practice*. [2011 JCR = **2.3**, #3/24 in Transportation]
17. Cusack, D., **J. Axsen**, R. Shwom, L. Hartzell-Nichols, S. White, K. Mackey (Draft). Assessing climate engineering solutions as complements to mitigation: An interdisciplinary framework. To be submitted to *PNAS*.
18. **Axsen, J.** and J. Davies (Early draft). Quantifying the GHG reductions of electric-vehicle recharge infrastructure, to be submitted to *Climatic Change*. [2011 JCR = **3.4**]
19. **Axsen, J.** (Outline). Electric vehicle hype and hope: The key to sustainable mobility? To be submitted to *Renewable & Sustainable Energy Reviews*. [2011 JCR = **6.0**.]

BOOK CHAPTERS

Published/Accepted

Axsen, J., A. Burke, and K.S. Kurani (2010). Batteries for PHEVs: Comparing Goals and the State of Technology, in *Electric and Hybrid Vehicles: Power Sources, Models, Sustainability, Infrastructures and the Market*, Ed. Gianfranco Pistoia, Elsevier, ISBN 978-0-444-53565-8.

Axsen, J., C. Yang, R. McCarthy, A. Burke, K. Kurani, and T. Turrentine (2011), The Plug-in Electric Vehicle Pathway, in *Sustainable Transportation Energy Pathways: A Research Summary for Decisionmakers*, Eds. Joan Ogden and Lorraine Anderson, Regents of the University of California, Davis campus. Available under a Creative Commons BY-NC-ND 3.0 license, published 2011, p.38-63.

In Progress

Ehardt-Martinez, K., **J. Axsen**, et al. (early draft). Consumption and Climate Change, in *American Sociological Association's Special Task Force on Climate Change*.

ACADEMIC AND INDUSTRY REPORTS

Axsen, J., and K. Kurani (2012). *Plug-in Vehicles and “Green” Electricity: A Survey of U.S. new car buyers*. Prepared for BMW of North America, LLC, Submitted May 31, 2012.

Axsen, J., C. Orlebar and S. Skippon (2011). *Social Influence and Consumer Perceptions during a U.K. Workplace EV Trial*. Report Submitted to Shell Global Technology, November 30, 2011.

Axsen, J. (2010). *Interpersonal Influence within Car Buyers’ Social Networks: Observing Consumer Assessment of Plug-in Hybrid Electric Vehicles (PHEVs) and the Spread of Pro-Societal Values*. Institute of Transportation Studies, University of California, Davis, PhD Dissertation, Research Report UCD-ITS-RR-10-15.

Kurani, K.S., **J. Axsen**, N. Caperello, J. Davies, and T. Stillwater (2009). *Learning from Consumers: Plug-in Hybrid Electric Vehicle (PHEV) Demonstration and Consumer Education, Outreach*, Market Research Program. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-09-21.

Axsen, J., and K.S. Kurani (2008). *The Early U.S. Market for PHEVs: Anticipating Consumer Awareness, Recharge Potential, Design Priorities, and Energy Impacts*. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-08-22.

Axsen, J., A. Burke, and K.S. Kurani (2008). *Batteries for Plug-in Hybrid Electric Vehicles (PHEVs): Goals and the State of Technology circa 2008*. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-08-14.

Axsen, J. (2006). *Combining Stated and Revealed Choice Research to Inform Energy System Simulation Models: The Case of Hybrid Electric Vehicles*, Master’s Thesis, Simon Fraser University.

Axsen, J., J. Nyboer and C. Bataille (2005). *Goods-Producing Small to Medium-Sized Enterprises: Energy End Use and Efficiency Potentials*, Prepared for Natural Resources Canada, Canadian Industrial Energy End-Use Data and Analysis Centre (CIEEDAC), March 2005.

CONFERENCE PRESENTATIONS

Transportation Research Board 92nd Annual Meeting, Washington, DC. January 13-17, 2013.

Presentations (peer-reviewed, accepted):

1. “Hybrid, plug-in hybrid or electric: What do car buyers want?”
2. “The ‘design space’ approach: Observing disaggregated consumer response and preference formation.”

Behavior, Energy and Climate Change, Sacramento, California, November 11-14, 2012.

Presentation (invited): “Will electric vehicle buyers want green electricity?”

International Society of Ecological Economics (ISEE 2012), Rio de Janeiro, Brazil, June 16-19, 2012. **Presentations:**

1. “Observing social influence and consumer preference formation: The case of a U.K. workplace electric-vehicle trial.”
2. “Lifestyle practices and pro-environmental technology.”

Transportation Research Board 91st Annual Meeting, Washington, DC. January 22-26, 2012.

Presentations (peer-reviewed):

1. “Can markets for electric vehicles and green electricity accelerate each other? Initial conversations with consumers.”
2. “Characterizing residential recharge potential for plug-in electric vehicles.”
3. “Lifestyle practices and pro-environmental technology.”
4. “Developing sustainability-oriented values and practices: Narrative accounts of drivers of plug-in hybrids.”

7th Social Network Conference 2011, Greenwich, U.K., July 7-9, 2011. **Presentation:** “Processes of social influence and sustainable consumption: Reflexive layers of influence as an integrative theoretical framework.”

Transportation Research Board 90th Annual Meeting, Washington, DC. January 23-27, 2011.

Presentations (peer-reviewed):

1. “Plug-in hybrid greenhouse gas impacts in California: Integrating consumer research with electricity grid modeling.”
2. “Interpersonal influence in the early plug-in hybrid market: Observing social interactions.”
3. “Processes of social influence and sustainable consumption: Reflexive layers of influence as an integrative theoretical framework.”

Behavior, Energy and Climate Change, Sacramento, California, November 29-December 2, 2010.

Presentation: “Social influence matters: How environmental values develop within social networks.”

Transportation Research Board 89th Annual Meeting, Washington, DC. January 10-14, 2010,

Presentations (peer-reviewed):

1. “Interpersonal influence within car buyers’ social networks.”
2. “Are batteries ready for plug-in hybrid buyers?”

Frontiers in Transportation: Social Interactions, Niagara on the Lake, Ontario, August 25-27, 2009. **Presentation:** “Interpersonal influence within car buyers’ social networks.”

Plug-in 2009, Long Beach, CA, August 11-13, 2009. **Invited Panelist:** “Telling stories: Conversations with consumers about PHEVs.”

24th International Electric Vehicle Symposium (EVS-24), Stavanger, Norway, May 13-16, 2009.

Presentation: “Anticipating PHEV energy impacts in California.”

Greening the Internet Economy: ICT and Global Change, California Public Utilities Commission, San Diego, CA, January 22-23, 2009. **Invited Panelist:** “Information and communications technology (ICT) and intelligent transportation.”

Transportation Research Board 88th Annual Meeting, Washington, DC. January 11-15, 2009.

Presentation (peer-reviewed): “The early market for PHEVs: Anticipating consumer recharge potential and design priorities.”

Behavior, Energy and Climate Change (BECC) 2008, Sacramento, CA, November 16-19, 2008.

Presentation: “Confusion of innovations: Exploring the adoption and diffusion of “green cars.”

Plug-In 2008, San Jose, CA, July 22-24, 2008. **Presentation:** “Challenging our assumptions: Anticipating the early market for PHEVs.”

23rd International Electric Vehicle Symposium (EVS-23), Anaheim, CA, December 2-5, 2007.

Presentation: “Consumer preferences for hybrid-electric vehicles: Understanding the neighbor effect.”

Behavior, Energy & Climate Change (BECC) 2007, Sacramento, CA, November 7-9, 2007. **Poster presentation:** “Market Research for PHEVs.”

I’ve also presented research findings to professional representatives from various organizations such as automakers, electric utilities and energy companies. Recent examples include Mercedes-Benz, Toyota, Shell Global, Nissan, Harley-Davidson, BMW motors, Volkswagen, Daimler, San Diego Gas & Electric, the California Public Utilities Commission, BC Hydro, Shell Oil, Aramco, and Chevron.

TEACHING

Courses

REM-658: Sustainable Energy and Materials Systems Modeling, SFU, Spring 2012.

5-credit graduate course with 12 students (meets 4 hours per week for 13 weeks).

All 12 (100%) students rated the course as an “A” (9) or “B” (3).

11 students rated the instructor’s teaching ability as an “A” (10) or a “B” (1).

REM/ENV-321: Ecological Economics, SFU, Fall 2011 and 2012.

3-credit undergraduate course with 52 students in 2012 (2 hours per week, 1 hour tutorial).

In 2011, 76% of students rated the course as an “A” or “B.”

In 2011, 76% rated the instructor’s teaching ability as an “A” or “B.”

REM-621: Ecological Economics, SFU, Fall 2012 (in progress).

5-credit graduate course with 25 students (meets 4 hours per week for 13 weeks).

Social Research Methods in Environmental Studies, SFU, Spring 2011.

Exploratory (presently non-credited) course with 6 graduate students.

ECI-163 Energy and Environmental Aspects of Transportation, UC Davis, Fall 2010.

3-credit undergraduate course with 108 students (3 hours lecture per week)

Served as co-lecturer with Professor Daniel Sperling.

Training

“**Rethinking Teaching**” Curriculum Design Workshop, 4-day workshop, SFU (April 26-May 1, 2012).

Instructional Skills Workshop (ISW), 3-day workshop, SFU (May 2-4, 2012).

“**Collaborative Connections: Develop a Community of Learners in Your Classroom and Beyond**,” six-part workshop, University of California, Davis (May-June, 2010).

SENIOR SUPERVISORY DUTIES

- Sykes, Maxwell, Master's of Resource Management (M.R.M.), Fall 2012 to present, "Prioritizing plug-in vehicle policy strategies by Canadian region."
- Peters, Derek, M.R.M., Fall 2012 to present, "Assessing 'smart grid' opportunities and barriers through media analysis."
- Fox, Jacob, M.R.M, Spring 2011 to present, "Comparing the societal costs of technologically-neutral and technologically-specific climate policies."
- Kamiya, George, M.R.M., Fall 2011 to present, "Greenhouse gas impacts from plug-in vehicle use in Canadian regions: Comparing BC, Alberta and Ontario."
- Moulé, Danette, M.R.M., Fall 2011 to present, "Assessing 'green lifestyles' in Canada."
- Mascarenhas, Karen, M.R.M., Fall 2011 to present, "Public acceptance of carbon capture and storage in Alberta regions."

SERVING ON STUDENT COMMITTEES

- Rambharack, Jeff, Ph.D. Spring 2012 to present, "Modeling the potential to link plug-in vehicles with intermittent sources of renewable electricity."
- Petropavlova, Ekatrina, Ph.D. Spring 2011 to present, "Public acceptance of climate policy in BC."
- Bailey, Harry Joseph, Ph.D. Fall 2011 to present, "A joint discrete choice model of plug-in vehicle buyer's purchase and recharge behaviour."

SUPERVISION OF TEACHING ASSISTANTS

- Kamiya, George, REM/ENV-321, Ecological Economics, three tutorials, Fall 2012.
- Irwin, Kim, REM-621, Ecological Economics, Fall 2011.
- Lutes, Kristin, REM/ENV-321, Ecological Economics, two tutorials, Fall 2011.

MEDIA EXPOSURE

Print

- Millar, E. (2012). Green versus green: An ecological economist asks: Does the environment get ignored in the economics courses business students take? *The Globe and Mail*, November 5, 2012.
- Axsen, J. (2011). B.C. government's plan to construct three LNG plants counters CO2 reduction efforts (Op-ed), *Vancouver Sun*, November 14, 2011.
- Luba, F. (2011). Burnaby native named young researcher of the year. *The Province*, May 18, 2011.
- Margonelli, L. (2008). The plug-in paradox, *Forbes Magazine*, November 24, 2008.

Radio

- CBC Radio Victoria, February 3, 2012: Regarding BC Hydro's announcement on liquefied natural gas (LNG)
- CBC Daybreak North, Prince Rupert, October 12, 2011: Regarding BC Province's claims of job growth from new LNG plants.
- The Afternoon News with Tom Young, May 20, 2011: Regarding "Why do consumers buy electric cars?"

RESEARCH FUNDING

Awarded

SSHRC Insight Development Grant, principal investigator, “Transitioning to sustainable lifestyle practices in Canada,” \$54,420, one year, awarded July 2012.

SSHRC Insight Grant, principal investigator, “Socio-technical transitions to low-carbon consumption: Assessing Canadian consumers’ readiness for electric-mobility,” \$223,051, three years, awarded May 2012.

SSHRC Partnership Development Grant, co-investigator, “Unlocking the potential of smart grids: A partnership to explore economic, social and policy dimensions,” \$180,000, three years. Awarded May 2012. [Resulted in \$20,000 sub-grant for my research group.]

SFU President’s Research Start-up Grant, principal investigator, \$40,000, two years, Awarded September 2011.

Under review

NRCan ecoENERGY Innovation Initiative R&D Contribution Initiative, primary co-investigator, “Powering plug-in electric vehicles with renewable energy supply in BC,” \$601,200, four years, submitted January 2012. [Would result in \$200,000 sub-grant for my research group.]

HONORS AND AWARDS

- **Scholar for Dissertations Initiative for the Advancement of Climate Change Research** (DISCCRS VI), NSF and NASA sponsored symposium, Colorado Springs, Colorado, November 22-29, 2011. [35 scholars selected from over 200 applicants.]
- International Transportation Forum (OECD), **Young Researcher of the Year**, (\$7,000), 2011. [Selected from 40 submissions from 22 countries.]
- Winner: **Outstanding Ph.D. Dissertation in Transportation Technology and Policy** (\$1,500), UC Davis, 2010
- **Eno Fellow in Transportation Leadership Development**, week-long policy training in Washington, D.C., 2010.
- **Chevron Corporate Fellowship** (\$9,000), UC Davis, 2009.
- Social Sciences and Humanities Research Council of Canada: **SSHRC Doctoral Fellowship** (\$80,000), 2007 – 2010.
- **Canadian Institute of Energy Scholarship Award** (\$750), Simon Fraser University, spring 2006.
- **British Columbia Automobile Association Environmental Studies in Transportation Award** (\$800), Simon Fraser University, fall 2005.
- Social Sciences and Humanities Research Council of Canada: **SSHRC Master’s Scholarship** (\$17,000), 2004 – 2005 academic year.
- **World Petroleum Congress Scholarship** (\$3,000), Simon Fraser University, 2003.
- **Mildred Wirtanen Academic Scholarship** (\$4,000), Simon Fraser University, 2003.
- **SFU Open Scholarship** (\$4,500), Simon Fraser University, 2002 – 2003.
- **Connell Prize in Corporate Finance** (\$300), Murdoch University, spring 2002.

ACTIVE SERVICE

SFU Environmental Science Advisory committee, October 2012 to present.
REM Graduate learning outcomes committee, spring 2012 to present.
REM Undergraduate curriculum committee, fall 2011 to present.

SERVICE TO COMMUNITY AT LARGE

Panelist for “Energy Resiliency: Meeting the Challenge,” for Metro Vancouver Sustainable Region Initiative, Vancouver, BC, November 3, 2011.

REVIEWER OF MANUSCRIPTS AND GRANTS FOR:

2012 ASME International Design Engineering Technical Conference
Ecological Economics
Energies
The Energy Journal
Energy Policy
Environmental Science and Technology
International Journal of Electric Power and Energy Systems
Journal of Cleaner Production
Resource and Energy Economics
Transportation Research Part C: Emerging Technologies
Transportation Research Record
UC Berkeley Transportation Center (UCTC)
UCLA Transportation Center
Vanderbilt University

Invited reviewer for adjudication of 2013 *Social Sciences and Humanities Research Council (SSHRC) of Canada*, Insight Grants in “Canadian Environmental Issues” and “Northern Communities: Towards Social and Economic Prosperity” (March 4-6, 2013).