

**ERS 375 – Energy Decision-making
Course Outline**

Course instructor:

Ian Rowlands (EV2-2026; ext. 32574; irowlands@uwaterloo.ca).

Office hours: Tuesdays 9:30-11:00am (NOT 21 January, 18 February, 4 March); Tuesdays 3:30-4:30pm (NOT 21 January, 18 February, 4 March)

Meetings:

Thursdays from 10:30pm-12:20pm in RCH-209.

Course website:

Course information will be delivered through the UW-LEARN system. Students will submit assigned work through this website, and receive feedback on the same through it as well.

Pre-requisite:

The pre-requisite for the course is at least 2B standing.

Course purpose and learning objectives:

The purpose of this course is to investigate and to understand better how decisions on energy issues are made at various 'levels' in various 'organisations' – from the individual up through to the international. The course explicitly adopts multidisciplinary and interdisciplinary approaches (looking for contributions to our understanding from various traditional disciplines as well as interdisciplinary efforts). The course pursues both conceptual and empirical material.

More specifically, coming out of this course, students should have developed capabilities in the following areas:

- an appreciation of the range of contemporary discussions and debates related to the practice and theory of energy decision-making;
- a detailed understanding of various perspectives around energy decision-making in a provincial context in Ontario;
- an in-depth understanding of a selected contemporary discussion and/or debate related to a particular practice and/or theory of energy decision-making; and
- an ability to summarise and to critique selected perspectives on energy decision-making.

Please recognise that this is the first time that this course is being offered; it is being 'pitched' as something 'between' a 'conventional course' (with a full suite of lectures/tutorials) and a 'reading course' (with occasional meetings to discuss common readings). This course will be run in an interactive manner, and many of the sessions will involve the following: the course instructor 'talking to' a series of slides, group discussion of common readings and an 'experiential learning' component (guest speaker, case-study, brief student presentations, etc). Elements of course assessment (below) give a further indication of the emphases placed upon different parts of the course.

Course assessment:

The course will be assessed by four elements. Full details regarding expectations for each (except 'final examination') are provided in individual 'rubrics', available on the course website.

- 1) Participation – 15%
- 2) Critique on Ontario's Long Term Energy Plan – written submission due before 11:59pm on Friday, 7 February; oral presentation in class on Thursday, 13 February – 15%
- 3) Research investigation – 45%
 - a. Research paper outline – due before 11:59pm on Friday, 28 February – 10%
 - b. Research presentation (in class on Thursday, 27 March) OR Research popular output (due before 11:59pm on Wednesday, 2 April) – 10%
 - c. Research paper – due before 11:59pm on Friday, 4 April – 25%
- 4) Final examination (two hours) – The final examination in this course will be held during the final examination period. (This will be held between 8 and 24 April, and every student is expected to be available throughout the final examination period.) Details of the final examination – including structure and candidate questions – will be provided in-class on Thursday, 3 April – 25%

Notes on electronic submissions:

- 1) Before you will be permitted to submit any document through any of the drop-boxes, you will have to complete the 'assignment checklist' which is presented to you in the form of a 'quiz' in LEARN. Though labeled a 'quiz', this will not be marked in any way, but must be completed before the drop-box for the particular assignment is open to you. The questions (which concern issues of 'academic integrity') refer, of course, to the particular assignment.
- 2) Please make your submissions in doc or rtf formats (NOT pdf).

Note on late submissions:

Late submissions will be penalised 5 per cent (of the 100 per cent available for that particular assignment) for each day (or part thereof) late. Please note that the LEARN system 'time-stamps' submissions, and 'late' will be considered anything after the deadline time. (For the record, 'one minute late' will be considered late.) Additionally, submissions will not be accepted after seven days (beyond the due date) have lapsed. Alternative arrangements may be made in exceptional circumstances (usually related to medical emergencies supported by documentation). As soon as students realise that their assignment may be submitted late for reasons that might potential be considered 'exceptional circumstances', they are encouraged to contact the course instructor.

Appropriate student behaviour and other notes:

Consequences of academic offences:

A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>

Within ENV, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties which may include a grade of 0 on affected course elements, 0 on the course, suspension, and expulsion.

Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy #70, Student Grievance, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>

Students are strongly encouraged to review the material provided by the university's Academic Integrity office (see: <http://uwaterloo.ca/academicintegrity/Students/index.html>).

Research ethics: Please also note that the 'University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Human Research and Animal Care (Office). The ethics review and clearance processes are intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants (Guidelines) as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.).' If your research involves humans as participants, then please contact the course instructor for guidance and see <http://iris.uwaterloo.ca/ethics/>.

Note for students with disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Religious observances: As appropriate, students need to inform the course instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Course readings:

All readings are available electronically, either through UW course reserve (CR) or at a particular website (WEB).

Course schedule:

| Date | Topic | Sample issues to be explored | Required readings (to be completed in advance of class) |
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| 9 Jan | Introduction to course and to energy systems and issues | <ul style="list-style-type: none"> - energy systems - the contemporary global energy agenda - course preview and overview | 1) Arnulf Grubler et al, 'Energy Primer', <i>Global Energy Assessment</i> (Laxenburg: International Institute for Applied System Analysis, 2013), pp. 99-150 – WEB (http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Chapter1_primer_hires.pdf) |
| 16 Jan | Introduction to 'decision-making theory', generally and individual decision-making, in particular | <ul style="list-style-type: none"> - definitions and theories of decision-making - rational decision-making and post-normal science challenges - models of individual decision-making - individual choice in household energy use | 1) 'Chapter 2: Decision-making Concepts', in Knut Lehre Seip and Fred Wenstep, <i>A Primer on Environmental Decision-Making</i> (New York: Springer, 2006), pp. 7-20 – CR. 2) S. Funtowicz and J. Ravetz, 'Post-Normal Science: Environmental Policy under Conditions of Complexity' – WEB (http://www.nusap.net/sections.php?op=viewarticle&artid=13). 3) Charlie Wilson and Hadi Dowlatabadi, 'Models of Decision Making and Residential Energy Use', <i>Annual Review of Environment and Resources</i> (Vol. 32, 2007), pp. 169-203 – CR. |
| 23 Jan | Household and organizational decision-making | <ul style="list-style-type: none"> - context: how groups make decisions - household decision-making - corporate decision-making | 1) Thomas Dietz, Paul C. Stern and Elke U. Weber, 'Reducing Carbon-Based Energy Consumption Through Changes in Household Behavior', <i>Daedalus</i> (Vol. 142, No. 1, Winter 2013), pp. 78-89 – WEB (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2291555##). 2) Martin Rudberg, Martin Waldemarsson and Helene Lidestam, 'Strategic Perspectives on Energy Management: A Case Study in the Process Industry', <i>Applied Energy</i> (Vol. 104, 2013), pp. 487-496 – CR. |
| 30 Jan | Community (municipality decision-making) | <ul style="list-style-type: none"> - communities as agents of change - councils and mayors; other players; other influences - community energy planning - guest speaker: Jeremy Schembri, Peel Region | 1) Gill Seyfang, Jung Jin Park and Adrian Smith, 'A Thousand Flowers Blooming? An Examination of Community Energy in the UK', <i>Energy Policy</i> (Vol. 61, 2013), pp. 977-989 – CR. 2) Laura Tozer, 'Community Energy Plans in Canadian Cities: Success and Barriers in Implementation', <i>Local Environment</i> (Vol. 18, No. 1, 2013), pp. 20-35 – CR. |
| 6 Feb | Provincial decision-making in Ontario | <ul style="list-style-type: none"> - relevant Ontario ministries; bureaucratic politics - modernizing Ontario's electricity system - guest speaker: Paul Murphy, Ontario Smart Grid Forum | 1) Daniel Rosenbloom and James Meadowcroft, 'The Journey Towards Decarbonization: Exploring Socio-Technical Transitions in the Electricity Sector in the Province of Ontario (1885-2013) and Potential Low-Carbon Pathways', <i>Energy Policy</i> (Vol. 65, 2014), pp. 670-679 – CR. 2) Leah C. Stokes, 'The Politics of Renewable Energy Policies: The Case of Feed-in Tariffs in Ontario, Canada', <i>Energy Policy</i> (Vol. 56, 2013), pp. 490-500 – CR. |

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| 13 Feb | Case-study of Ontario's Long-Term Energy Plan | - see details in associated rubric | 1) <i>Achieving Balance: Ontario's Long-Term Energy Plan</i> (Toronto, ON: Ministry of Energy, 2013) – WEB (http://www.energy.gov.on.ca/en/ltep/#.UrJPwPRDu6M). |
| 20 Feb | NO CLASS – Reading week | | |
| 27 Feb | National decision-making in Canada | - the Canadian Constitution's division of power - enablers and barriers to a national energy vision - guest speaker: Nicholas Belanger, University of Waterloo | 1) Monica Gattinger, 'A National Energy Strategy for Canada: Golden Age or Golden Cage of Energy Federalism?', in Loleen Berdahl and André Juneau (eds), <i>Canada: The State of the Federation 2012-2013</i> (Montreal, QC: McGill-Queen's University Press, forthcoming) – CR. 2) Tides Canada, <i>Towards a Clean Energy Accord</i> (Tides Canada Energy Initiative, 2012) – WEB (http://cleanenergycanada.org/wp-content/uploads/2012/09/Towards-a-Clean-Energy-Accord-V2.pdf). |
| 6 Mar | CANCELLED – Rowlands away | | |
| 13 Mar | Continental decision-making | - sovereignty and 'anarchy' in the international system - Canada-US Clean Energy Dialogue - case-study: Keystone XL pipeline | 1) David Biette and Andrew Finn, 'Changing Energy: Canada and the United States', <i>Wilson Centre Policy Brief</i> – WEB (http://www.wilsoncenter.org/sites/default/files/changing_energy_canada_and_the_united_states.pdf). 2) Monica Gattinger, 'Canada-United States Energy Relations: Making a MESS of Energy Policy', <i>American Review of Canadian Studies</i> (Vol. 42, No. 4, December 2012), pp. 460-473 – CR. 3) Jatin Nathwani, 'Beyond Keystone: Canada's Clean Electricity', <i>Policy Options</i> (June 2013), pp. 27-28. – WEB (http://www.irpp.org/assets/po/nudge-experiments-in-human-nature/nathwani.pdf). |
| 20 Mar | Global decision-making | - global energy organisations: IRENA, IEA, etc. - global energy governance - cross-national energy comparisons | 1) Ann Florini and Benjamin K. Sovacool, 'Who Governs Energy? The Challenges Facing Global Energy Governance', <i>Energy Policy</i> (Vol. 37, No. 12, December 2009), pp. 5239-5248 – CR. 2) Kamil Kaygusuz, 'Energy for Sustainable Development: A Case of Developing Countries', <i>Renewable and Sustainable Energy Reviews</i> (Vol. 16, 2012), pp. 1116-1126 – CR. |
| 27 Mar | Student presentations | | |
| 3 Apr | The current agenda and future prospects | - student reports on the 'popular output' emerging from their project - course summary - prospects: empirical and conceptual - course evaluation - final examination preview | - something from a 'news item' and discuss the significance. |

Ian Rowlands, December 2013