



OPUS
College of Engineering

MARQUETTE UNIVERSITY

EECE New Graduate Course Offering
Spring 2019
EECE XXXX* (cross-listed with law school)
Course number will be available soon in checkmarq

No prerequisites

Energy Law Workshop

Tuesday 5:30-7:30 PM

Prof. Ayman EL-Refaie and Adjunct Prof. Arthur Harrington

**Electrical and Computer
Engineering Department**

Law School

This course will focus on the legal policy and technical framework for electrical energy project development in Wisconsin. The course will be jointly taught on an alternating schedule by Marquette Law School Adjunct Professor Arthur J. Harrington and Marquette Engineering School Professor, Dr. Ayman EL-Refaie. Law and Masters Engineering students are eligible to attend and qualify for two (2) credits in their respective schools. While the workshop will provide an overview of the regulation of electrical projects, the focus will be on opportunities for nonutility lawyers and engineers involved in smaller scale electrical generation projects in Wisconsin. It will cover the following related to such smaller scale projects: corporate structuring, financing, taxation, permitting as well as strategies to support and oppose such projects. The workshop will provide a general overview of legal and technical considerations for emerging renewable technologies in Wisconsin, such as biomass, waste to energy, geothermal, solar and wind projects. The workshop will focus on gaining experience for Law and Engineering students to have a general appreciation for the manner in which the legal and engineering disciplines interact to make successful energy projects in Wisconsin

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SYLLABUS

Required Materials for Law and Engineering Students

1. Energy Law by Alexandra B. Klass and Hannah J. Wiseman, Foundation Press, 2017.
2. Renewable Energy “Power for a Sustainable Future,” Edited by Godfrey Boyle, Oxford University Press, 2004.
3. Following Selected Additional Readings
 - a. City of Sun Prairie v. Pub. Serv. Comm'n, 37 Wis. 2d 96, 154 N.W.2d 360 (1967).
 - b. Letter from Robert D. Norcross, Admin., Gas & Energy Div., Pub. Serv. Comm’n of WI (Feb. 2012).
 - c. Public Service Commission of Wisconsin and Department of Natural Resources, *Application Filing Requirements Electric Generation Projects in Wisconsin* (Jan. 2015). [Connect Online](#).
 - d. Public Service Commission of Wisconsin, et al., *Application Filing Requirements for Wind Energy Projects in Wisconsin*, Version 5B (Feb. 2012). [Connect Online](#).
 - e. Wisconsin Legislative Council, WISCONSIN LEGISLATOR BRIEFING BOOK 2015-16, CHAPTER 29, UTILITIES AND ENERGY [Connect Online](#)

I. COURSE OVERVIEW

This course will focus on the legal policy and technical framework for electrical energy project development in Wisconsin. The course will be jointly taught on an alternating schedule by Marquette Law School Adjunct Professor Arthur J. Harrington and Marquette Engineering School Professor, Dr. Ayman EL-Refaie. Law and Masters Engineering students are eligible to attend and qualify for two (2) credits in their respective schools. While the workshop will provide an overview of the regulation of electrical projects, the focus will be on opportunities for nonutility lawyers and engineers involved in smaller scale electrical generation projects in Wisconsin. It will cover the following related to such smaller scale projects: corporate structuring, financing, taxation, permitting as well as strategies to support and oppose such projects. The workshop will provide a general overview of legal and technical considerations for emerging renewable technologies in Wisconsin, such as biomass, waste to energy, geothermal, solar and wind projects. The workshop will focus on gaining experience for Law and

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II. EVALUATION AND GRADING

Professors Harrington and EL-Refaie will take attendance every class, and we will consider attendance, punctuality and participation (discusses below) when awarding final grades. Any student that misses more than 20% of scheduled classes will be administratively withdrawn from the course with a grade of an “F”.

Each student will be required to prepare and submit a paper to discuss strategies relating to a hypothetical proposed small scale energy project in Wisconsin (“Hypothetical Project”). The paper will discuss the strategies for permitting, financing and siting the Hypothetical Project. The paper will also discuss likely strategies that will be encountered in parties opposing the facility and techniques to mitigate those anticipated opposition strategies (“Paper Project”). In addition, each student will be required to provide a 15-30 minute in class presentation on one assigned topic relating to one of following topics relating to the Hypothetical Project: financing, permitting, siting considerations, technical considerations, corporate structuring, taxation (“Presentation Project”). We will distribute a summary of the Hypothetical Project for technical challenges on the first day of class. The Presentation Project for each student will be assigned in week 5 of the course and the student presentations will be made during weeks 13 and 14 of the course.

All student grades will be based on combination of: (1) Participation in class and assignments (25%); and (2) Effectiveness and persuasiveness of Presentation Project (25%).

For Engineering students, 50% of grade will be based upon a mid-term and final exam. For Law students, 50% of the grade will be based upon a take home exam at the end of the semester.

By the conclusion of the course, each student is expected to achieve the following:

- A general understanding of the manner in which environmental, energy regulations and technology play a role in energy project development
- A general understanding of the role that tax law and state/federal approvals apply to energy project development
- A general understanding of the developing technology in electrical projects including wind, solar, hydro and biogas facilities
- Understand the role that lawyers and engineers can take using these concepts to advocate for opposing or supporting these projects depending upon the client’s perspective
 - Support an energy project
 - Oppose an energy project
 - Advise a state agencies requirements that apply to an energy project

- An understanding of the manner in which legal and engineering professionals must coordinate their efforts for support of a successful renewable energy project in Wisconsin

CLASS SCHEDULE

Date	Topics	Assigned Readings	Assignment	Instructor
1.	<p>Introductions. Course overview. Overview of energy and environmental regulations for energy projects. Overview of administrative law/judicial review principals.</p>	<ul style="list-style-type: none"> • <u>Energy Law</u> Klass and Wiseman. Pages 1 - 7. • Wisconsin Legislative Council, WISCONSIN LEGISLATOR BRIEFING BOOK 2015-16, CHAPTER 29, UTILITIES AND ENERGY. Connect Online 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Art Harrington
2.	<p>Introductions. Course overview. Introduction of different types of renewable energy sources. More in depth introduction of wind energy.</p>	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY “Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapter 1 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refae
3.	<p>Overview of federal and state environmental permitting for renewable energy projects.</p>	<ul style="list-style-type: none"> • <u>Energy Law</u> Klass and Wiseman. Pages 97, 111 – 130. 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Art Harrington
4.	<p>Principles of wind energy</p>	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY “Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapter 7 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refae
5.	<p>Overview of FERC and PSC regulations for energy projects.</p>	<ul style="list-style-type: none"> • Public Service Commission of Wisconsin and Department of Natural Resources, <i>Application Filing Requirements Electric Generation Projects in Wisconsin</i> (Oct. 2017). • <u>Energy Law</u> Klass and Wiseman. Pages 165 – 181 and 187 – 196. 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Dave Gilles, former General Counsel of PSC and Nathan Zolik of Godfrey & Kahn, former Executive Assistant to PSC Chairman

Date	Topics	Assigned Readings	Assignment	Instructor
6.	Principles of solar photovoltaics	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY “Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapter 3 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refai
7.	Overview of electrical transmission, distributive generation and cyber security	<ul style="list-style-type: none"> • <u>Energy Law</u> Klass and Wiseman. Pages 73 – 90. 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Art Harrington and Christopher Zibart, Deputy General Counsel of American Transmission Company
8.	Principles of solar thermal	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY “Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapter 2 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refai
9.	Overview of structuring energy projects, financing and taxation of renewable energy projects	<ul style="list-style-type: none"> • <u>Energy Law</u> Klass and Wiseman. Pages 139 – 164. 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Art Harrington
10.	Principles of hydro, wave and tidal power	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY “Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapters 5,6,8 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refai

Date	Topics	Assigned Readings	Assignment	Instructor
11.	Overview of strategies to oppose energy projects	<ul style="list-style-type: none"> • Public trust • NEPA • <u>City of Sun Prairie v. Pub. Serv. Comm'n, 37 Wis. 2d 96, 154 N.W.2d 360 (1967)</u> • <u>SZ Enterprises, LLC v. Iowa Utilities Bd., 850 N.W.2d 441, 453 (Iowa 2014), as corrected (Aug. 14, 2014)</u> • Letter from Robert D. Norcross, Admin., Gas & Energy Div., Pub. Serv. Comm'n of WI (Feb. 2012). 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Art Harrington
12.	Principles of geothermal, bioenergy and LCOE	<ul style="list-style-type: none"> • Class notes • RENEWABLE ENERGY Power for a Sustainable Future”, Edited by: Godfrey Boyle, Oxford University Press 2004 : Chapters 4,9, Appendix B 	<ul style="list-style-type: none"> • Assignment covering lecture contents 	Ayman EL-Refaie
13.	Student Presentations			
14.	Student Presentations			