Energy Resource Management and Development

A WORKFORCE-DIRECTED BACHELOR OF SCIENCE
MULTIDISCIPLINARY DEGREE PROGRAM AT THE UNIVERSITY OF WYOMING

University of Wyoming
Projections show that by 2035, energy consumption worldwide will increase nearly 50 percent.* Petroleum, coal, natural gas, renewables, nuclear energy – the use of all fuel types – will grow markedly in the coming decades as the world’s population dramatically increases and developing nations modernize. Due to technical advances, U.S. oil production is expected to increase 20 percent and renewables will provide approximately 16 percent of the U.S. electric supply.


**World Marketed Energy Use by Fuel Type**

The Powder River Basin is the largest coal-producing region in the nation, accounting for approximately 40 percent of all coal mined in the United States.

Wyoming is the home of scenic wonders such as Yellowstone, and it is also rich in minerals and energy assets. Wyoming produces the equivalent of ~10.42 quadrillion BTUs annually, which is approximately 10 percent of the total U.S. energy consumption, and ranks among the top 10 primary energy producers worldwide. Although carbon-based assets form the majority of Wyoming’s energy supply, the state also has significant uranium, geothermal and solar resources and vast potential for wind energy development.

Wyoming Energy Production and Reserves (rank out of 50 states)

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<th>Production</th>
<th>Reserves</th>
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<tbody>
<tr>
<td>Coal</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Uranium</td>
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<td>1</td>
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<tr>
<td>Natural Gas</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Petroleum</td>
<td>8</td>
<td>3</td>
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<tr>
<td>Wind Energy</td>
<td>8</td>
<td>Vast</td>
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Wyoming is the #1 Exporter of Energy to the United States and is a Major Global Energy Force

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“...The future of energy will be characterized by increasing knowledge, relentless change, and technological sophistication. Information will have a very short shelf life. The Energy Resource Management and Development degree is a rigorous and demanding program designed to train graduates for sustained competitive success in the energy workforce at the frontiers of knowledge and for self-directed, life-long learning.”

Don Roth, Deputy Director for Academics, School of Energy Resources

University of Wyoming: A Global Leader in Energy Education

And who’s training the energy sector’s future leaders? We are. Right here at the University of Wyoming.
I was interested in the Energy Resource Management and Development program right away because it offers a diverse body of classes – spanning fields like business and law, and technical areas like chemistry and engineering. It develops a very powerful base of knowledge for addressing complex energy issues.

Alumni Kyle McDonald. Hometown: Jackson, Wyoming

LEADERSHIP IN ENERGY INDUSTRIES

Half of the leadership in the energy industries is expected to retire in the next five to ten years. Many energy professionals have training in a specific discipline, such as engineering, geology or economics. However, as global energy issues increase in complexity, the demand is growing for professionals with a multidisciplinary background.

These professionals are able to understand and draw on the expertise of engineers and other energy scientists but are also able to understand the business, legal, social, and public policy implications of a given project. They act as the hub of the wheel, creating comprehensive solutions.

The Energy Resource Management and Development program is designed to fill this need. Through a combination of rigorous academic training, hands-on scenarios, and real-world internships, students are prepared for essential roles in the future energy arena.

ENERGY RESOURCE MANAGEMENT AND DEVELOPMENT CURRICULUM

All students take a core curriculum designed to provide breadth of learning and then select one of four concentrations for specialization. Due to the multi-disciplinary nature of the curriculum, most students elect to complete a dual major or minor. Success is up to you but we will offer every opportunity for you to achieve your goals.
FOCUSING ON CAREER PLACEMENT

Our program emphasizes career planning and provides constant one-on-one guidance and assistance to ensure optimal workforce placement. Students have opportunities to complete internships, undergraduate research, a study abroad experience, a summer field trip and a culminating capstone course. Multiple events during the year connect students to energy industry professionals.

INTERNSHIPS

The School of Energy Resources (SER) has strong relationships with many of the world’s most prominent energy companies and governmental agencies. We are able to offer our students excellent internship opportunities throughout Wyoming, the United States, and even abroad. We emphasize practical, hands-on learning in our program and the internships testify to that commitment. Internships provide on-the-job training and are an excellent path to workforce placement.

UNDERGRADUATE RESEARCH

Through the School of Energy Resources Centers of Excellence, students have the opportunity to work in state-of-the-art research labs with faculty mentors, graduate students, and industry partners. Projects can be designed to meet student needs and career goals. Students are currently conducting research in the areas of enhanced oil recovery, photoconversion and catalysis, reclamation and restoration, and reservoir modeling. Often research outcomes are published in professional journals.

Competitive fellowship opportunities provide students with a stipend while completing research projects. Visit www.uwyo.edu/ser/energy-resource-management/scholarships for more information.

STUDY ABROAD

SER has established agreements with universities around the world for short-term or semester-long exchanges and to participate in international conferences and professional workshops.
TYPES OF JOBS THAT NEED ENERGY RESOURCE MANAGEMENT AND DEVELOPMENT GRADUATES

- Exploration, development and management in coal, oil, gas and uranium
- Field Engineering
- Solar, wind and geothermal energy development and management
- Environmental Health and Safety Analyst
- Reservoir modeling and simulation
- Unconventional oil and gas project development
- Geology and Geophysics
- Land administration/Landman – Visit landman.org for more information
- Energy lease negotiations
- Regulatory oversight and planning including Energy Information Administration development
- Private or government permitting
- Risk analysis
- Air, water and land quality monitoring and remediation
- Public relations
- Basic research and discovery
- Energy law

GRADUATE SCHOOL OPPORTUNITIES

- University of Wyoming Masters of Business Administration in Energy Management
- University of Wyoming Masters of Business Administration with an Energy Management Concentration
- Although primarily a workforce-directed program, recent graduates have also entered graduate programs in traditional energy disciplines such as geology and geophysics, water resources, and petroleum engineering

“There may be no greater challenge facing mankind than figuring out how to meet the energy needs of a planet that could have 9 billion people living on it by 2050. Energy Resource Management and Development graduates will hit the ground running as they become part of the integrated asset management teams that manage energy development in the 21st century.”

Keith O. Rattie, Chairman of QEP Resources Inc.

“I worked on wind farms, performing quality control and substation wiring and testing during four summers. My hope was to become a consultant, business owner, or project manager. I was hired as a Wind Operations Associate Supervisor managing a wind farm. This degree gave me the opportunity to work in my dream job.”

Alumni Aron Anderson. Hometown: Rolling Hills, Wyoming
FINANCIAL AID
The Energy Resource Management and Development program provides many opportunities to receive competitive scholarships and fellowship for undergraduates.


OUR FACULTY
Professors in the Energy Resource Management and Development program are internationally recognized energy experts who are actively involved in both energy research and teaching. They work in a variety of disciplines and have very productive collaborations across campus and around the world. Students are fortunate to have opportunities to work directly with faculty and graduate students on leading-edge energy projects. Faculty are committed to mentoring students, providing them every opportunity to succeed.

SUPERCOMPUTING CAPABILITIES
Students have amazing opportunities to learn advanced supercomputing skills at UW’s facilities and at the NCAR-Wyoming Supercomputing Center (NWSC) located in Cheyenne, Wyoming. These are world-class facilities that provide UW and its students the top level of computational analysis learning experiences.

TO APPLY OR LEARN MORE
We invite you to call the School of Energy Resources at 307-766-6879 or e-mail seracad@uwyo.edu to learn more about this exciting option.

If you find that you are interested in the energy industry but would rather focus on one specific discipline, such as engineering, geology, or economics, we recommend that you explore the many other excellent programs at the University of Wyoming with energy specialties.
About the University of Wyoming and the School of Energy Resources

Located in Laramie, the University of Wyoming is the only four-year institution granting bachelor’s, master’s, and doctoral degrees in the state. Combining major-university benefits with small-school advantages, we offer students a truly unique and quality educational experience. UW stands at the forefront in the exploration of emerging technologies and concepts, giving our students the types of hands-on involvement and one-on-one attention rarely found at other colleges and universities. And we also continue to be recognized nationally as one of the best values in higher education.

The School of Energy Resources (SER) at the University of Wyoming was created in 2006 to enhance the university’s energy-related education, research, and outreach. SER showcases many energy research projects at UW and bridges academics and industry.

The University’s policy has been, and will continue to be, one of nondiscrimination, offering equal opportunity to all employees and applicants for employment on the basis of their demonstrated ability and competence without regard to such matters as race, sex, gender, color, religion, national origin, disability, age, veteran status, sexual orientation, genetic information, political belief, or other status protected by state and federal statutes or University Regulations.

“Because of the knowledge I received in my Energy Resource Management and Development major, I was given the opportunity to intern with one of Wyoming’s oil and gas companies. This internship has given me the experience for future positions in the energy field.”

Student Jared Radosevich, Hometown: Rock Springs, Wyoming

“The Energy Resource Management and Development curriculum has allowed me to transition smoothly into the natural gas industry during my summer internship. Much of the coursework has reinforced my experiences in the field and vice-versa. Completing an internship early in my degree has been a great opportunity to bridge between academia and industry, building on my interests and expanding the parameters of my thinking.”

Student Carla Moss, Hometown: Riverton, Wyoming