

Course Overview

GREEN, in partnership with Reykjavik University provides a 10-day comprehensive overview of the commercial renewable energy industry using Iceland and its infrastructure as our classroom. For many of our students, the course work, site visits, and cultural exposure to the people and practices of Iceland will spark a lifelong passion for renewable energy and sustainable living practices. The educational approach is a blend of individual study on provided materials and corresponding classes, interactive discussion, site visits, hands on endeavors, community service initiatives, interactive lectures with industry professionals and professors from Reykjavik University's Iceland School of Energy. The academic curriculum culminates in our popular Capstone Project presentations, which are attended by industry experts, advisors and even investors.

EXPECTED COURSE OUTCOMES

- Gain a comprehensive understanding along with a personal familiarity of the science and technology behind renewable energy systems: hydroelectric, geothermal, solar, wind power, biomass, and bio fuels.

· Attain a clear grasp of cost analyses and environmental impact of renewable energy production facilities in historical, present and future context.

- Develop skills to evaluate energy sources and projects in terms of feasibility within the matrix of technical, economic, environmental, and political implementation.

- Observe Iceland's energy policies, natural resource legislation and other legislative controls impacting the production and sale of electricity in the nation and across Latin America.

- Advance on the vocabulary and concepts essential to commercial energy production, transmission, management and legislation.

- Develop leadership, teamwork, and networking skills through adventure excursions and exposure to professional industry relationships.

- Excel within a network of like-minded students who aspire to work and innovate in the field of renewable energy and sustainability

- Gain a critical global perspective demanded by corporate recruiters today to prepare for accelerated career opportunities.



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ENERDYNAMICS ONLINE MODULES

Each student is required to complete an online course module through Enerdynamics prior to their participation in the GREEN Program. The Enerdynamics Renewable Energy Overview course provides a big picture overview of renewable power. The modules educate GREEN students on the primary renewable resources used to generate electricity, the technologies used for each resource, and how each technology actually works. Key attributes discussed determine the benefits, costs and challenges associated with each renewable generation technology and the future potential for each resource. The course is comprised of six modules over approximately 4 hours; an introduction as well as Wind Power, Solar Power, Geothermal Power, Biopower, and Hydro and Hydrokinetic Power.

SCHEDULED CLASS SESSIONS

The class sessions are designed to provide a platform for understanding the specific topics explored on the program. They are not designed as in-depth studies of one specific subject, rather a comprehensive overview of the topic followed up with the most recent and up to date developments in the industry and related to the hands-on experiences of the Program. The classes serve as a launching point for rigorous discussions and classroom debates on related articles. Each student is required to complete an online course module through Enerdynamics prior to their participation in the GREEN Program. The classes in Iceland take place at Reykjavik University and last approximately 1.5 hours with an additional hour allotted for discussion and review.

The following classes are required with the topics covered on the GREEN Program:

Energy in Transition Introductory Session

Overview of the physical basis of energy conversion systems and some important terms relating to economic and technical performance and environmental impact. Also, Capstone Projects are to

be introduced to the Program.

Geothermal

Learn about the origin of Iceland's geothermal resource, its characteristics, direct use, power production and ability to extend the value chain.

Alternative Fuels

Discuss the challenges of producing biofuels in a harsh environment, crop selection and production processes.

Hydropower

Characteristics of hydropower, technology and its impact. Discover the vast amount of hydropower in Iceland.

Geology

Studying the the geophysical processes that set the stage for energy use in Iceland and create the unique natural environment that we strive to preserve.

Wind & Solar

Overviews and case studies of Iceland's history and progress with Wind and Solar energy production.

Biomass & Biofuel

Profitable by-products, co-generation process and global economic trade



under Bolderson has almost 50 years of experience as a profressional gineer and educator, particularly in the field of hydropower development. It has degrees in biology and civil engineering from the University of land and Demarks Technical University, respectively. He has worked a number of renewable energy projects in Iceland, both in the field of dropower and oesthermal energy.



with a degree in Geophysics. Her prime interest has been within seismology and monitoring of hazardous events, such as earthquakes and volcanic eruptions. She has a long experience in running and developing a highly automated seismic system at the localandic Meteorological Office (see: http:// vedur.is). Lately she has been involved in planning geothermal projects, but is now studying seismicity and crustal structure with emphasis on earthquake prediction research. Agust Valfelis has degrees in mechanical and nuclear engineering from

but is now studying seismicity and crustal structure with emphasis on earthquake prediction research. Agust Vallells has degrees in mechanical and nuclear engineering from the University of Iceland and the University of Michigan, respectively. His interests range from plasma physics to energy technology and policy. At the National Energy Authority of Iceland, he worked on promoting alternative fuels. At Reykjavk University he has helped build up graduate studies and research in sustainable energy.

graduated from University of Copenhagen in 1985

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CAPSTONE PROJECT

As part of the GREEN Program, each student is required to choose and develop an independent project dealing with topics related to Renewable Energy, Public Policy, Business, Ecology, Environmental Science and others. Each student will work in groups to collaborate on this Capstone Project in an interdisciplinary manner.

The project must address a current issue, which can be solved or improved through the application of renewable energy policy, technology, business, sustainable ecology, and environmental policy.

The Capstone Project inspires and motivates students to think outside the box and implement their newfound knowledge, while creating innovations of tomorrow. A number of student projects have been presented as proposals and are currently in their beginning stages of implementation. Several projects gained University funding and grants upon return to the student's home institution. Furthermore, two capstone projects were developed into real scalable businesses over the course of the past year. Historically each capstone presentation has had the presence of one or more of the commercial energy plant managers or employees, and is taken very seriously by our students, faculty, staff and guests.

PREREQUISITES

Students must be 18+ years old

Students should submit a brief statement of recommendation from faculty, colleague or advisor Students must submit an official application for the GREEN Program

COURSE SCHEDULE

For a full program itinerary please consult our program package and our website, theGREENprogram.com. The following presents a sample schedule of just the academic components of the GREEN Program. Please keep in mind that each day is packed from sunrise to sunset with a mix of activities, which blend education, adventure, culture and community service to create a unique and transformational global experience for each student.

GREEN Program Iceland Contact Hours Breakdown

4 hours - Enerdynamics Renewable Energy Overview Online Module (completed before program)
10 hours - Class lectures, discussion reflection
14 hours - Exclusive Renewable Energy facility visits
24 hours - Capstone project development

52 Total Contact hours worth 3 ECT credits (Official Transcript) Program Accredited by Reykjavik University's Iceland School of Energy

Interactive workshops, hands-on site visits, cultural excursions, community service initiatives and capstone projects are among the short list of invaluable educational tools the GREEN Program provides for its students. Contact a GREEN personal representative or GREEN Director of University Partnerships, <u>Brady@theGREENprogram.com</u> to explore the opportunity to establish a credit bearing curriculum for your students.



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