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TU WIEN CONTINUING EDUCATION CENTER

ENERGIE PARK BRUCK AN DER LEITHA

Renewable Energy in Central & Eastern Europe

Vienna University of Technology I Energiepark Bruck/Leitha

ASIIN e.V. accredited degree program

Postgraduate MSc Program
Master of Science (MSc)
4 semesters, part-time

Become THE EXPERT for the most important topic of your generation

The global economic trend for the next decades will be affected more than ever by issues relating to the lack of security in availability of resources. Dependability of supply, with energy carriers and resources in sufficient quantities and at acceptable cost, will be of vital importance for all of us – both industrialized and developing countries.

Never before has the demand on employees been so high. You have to contribute in-depth knowledge as well as ensure your own education stays abreast of technological progress. In the part-time MSc Program "Renewable Energy in Central & Eastern Europe" the participants will receive the very best preparation for the demands of sustainable energy economics. It will provide them with an opportunity to seek specialist roles in the challenging and rapidly expanding field of renewable energies and energy efficiency systems. Our graduates will be able to add impetus to the incipient energy rethink in different positions in business and society:

- It takes project implementation specialists to plan and operate alternative energy production facilities;
- Financing institutions and governmental agencies more and more frequently face the challenge of having to competently assess such projects;
- Even conventional energy providers see good business opportunities in this future industrial sector.

In this growing sector, the demand for well-founded know-how has increased. The complementary strengths of the TU Vienna and Energiepark Bruck/Leitha partnership make this MSc Program an outstanding opportunity to satisfy market demand and specifically targeted at the growing markets in Central and Eastern Europe.

The interdisciplinary part-time MSc Program is offered by the Vienna University of Technology in cooperation with Energiepark Bruck/Leitha. Contributions will be made by University of West Hungary (Györ), Czech Technical University (Prague), AGH-University of Science and Technology (Krakow), ApE – Agencija za prestrukturiranje energetike (Ljubljana), Energetski institut Hrvoje Pozar (Zagreb), and National Technical University of Ukraine – Kyiv Polytechnic Institute (Kiev). Tailor-made country modules are offered to gain in-depth knowledge on energy markets in CEE.

VIENNA UNIVERSITY OF TECHNOLOGY

Technology for People –
Developing Scientific Excellence and Enhancing Comprehensive Competence

The Vienna University of Technology – located in the heart of Europe and Vienna – is the largest Austrian institution in research and education within the areas of technology and natural sciences. Even though the beginnings of TU Vienna reach back nearly 200 years research, teaching, and learning are state-of-the-art.

ENERGIEPARK BRUCK/LEITHA

Ambitious targets in the areas of renewable energy and climate protection are not the illusion of a few but rather, a realistic challenge for all.

The association Energiepark Bruck/Leitha was established in 1995 and is a center for innovation and motor for development in the areas of renewable energy, climate protection, and regional development.

Our current standard of living - all goods and services we enjoy - is based on the consumption of energy. However, this system is currently not sustainable. Renewable energy sources as well as more effiicient ways to use energy are cornerstones in converting our economy into a sustainable system. The objective of the postgraduate MSc Program "Renewable Energy in Central & Eastern Europe" is, to contribute significantly to this process.

Univ.Prof.Dr.techn. Reinhard Haas
Academic Director

CURRICULUM

MODULE 1 **Introduction on Renewable Energy**	Non-conventional energy production, energy mix, energy trade, international and European programs and conventions in the sector of renewable energy • Economic aspects of renewable energy, basic economics, basic management, introduction on risk evaluation and risk management • Structural planning • Distribution networks (electric, thermal, gas), feeding-in and control of distribution networks • Practical examples of network interaction
MODULE 2 **Biomass, Biofuels & Biogas**	Principles of energetic use of biomass (physical, chemical), available raw material resources, and ecological resource management • Plant engineering for the energetic use of biomass (electric, thermal, gas, liquid) • Planning, construction, implementation, operation, and maintenance • Economic evaluation, risk, and cost aspects • Practical examples, field trips to existing plants
MODULE 3 **Solar Energy – Solar Heating & Photovoltaics**	Physical principles of the use of solar energy • Potentials • Plant engineering for the use of solar energy (electric, thermal) • Planning, construction, implementation, operation, and maintenance • Economic evaluation, risk, and cost aspects • Practical examples, field trips to existing plants
MODULE 4 **Geothermal Energy, Wind Power & Small Hydro Power**	Physical principles of energy usage • Available resources, potentials • Plant engineering for energy generation (electric, thermal) • Planning, construction, implementation, operation, and maintenance • Economic evaluation, risk, and cost aspects • Practical examples, field trips to existing plants
MODULE 5 **Efficient Energy Use & Thermal Building Optimization**	Physical principles, energy demand of buildings, building services engineering • Optimized building concepts, potentials, opportunities • Energy efficiency in the public sector and in companies • Outsourcing of energy supply services • Economic evaluation, risk, and cost aspects • Analysis of practical examples
MODULE 6 **General Legal & Economical Frameworks**	Legal aspects of renewable energy according to the EU regulatory system • Basics of European Community Law • Austrian national legal basis of renewable energy • Valuation and financing of energy projects • Business plans for energy projects • Financial planning for energy projects • Principles of accounting • Tax law • Investment law / licensing procedure
MODULE 7 **Integration of Renewable Energy Sources into the Energy System**	Fundamentals of electricity markets and CO2 emissions trading • Basics of electricity grids • Future role and responsibilities of transmission grids • Grid integration of renewables and the concept of smart grids • Market integration of renewables and storages • Direct marketing of green electricity • Example for integrating RES-E into the grid • Market overviews on renewable energy in CEE/SEE, currently in Austria, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia, and Ukraine
MODULE 8 **Management & Soft Skills**	Operative organization, team building • Self management, conflict management • Information work and opinion forming, media relations • Civic participation • Presentation, moderation
MODULE 9 **Perspectives on the Use of Renewable Energy**	Developments in world energy consumption • Future technologies • Technology assessment • Environmental protection and environment-related issues
MODULE 10 **Master's Thesis**	A Master's Thesis is written relating to the student's occupational activity and focussing on the feasibility of practical implementation.

Subject to modification

This master program is an outstanding opportunity to become part of an international, enthusiastic and extraordinary group of people, sharing the same interests for such a challenging topic. The experiences of this course enable us to contribute to the common goal of securing the supply of green energy at affordable prices in order to maintain our standards of living and reducing dependence on fossil fuels at the same time.

Mag. Anna Katharina Gollob, MSc
Alumna Class 2009–2011

PROGRAM OBJECTIVES/GOALS

With the MSc Program the participants acquire knowledge and competence for

- planning with regard to the use of renewable energy,
- economically and technically expediently operating plants for the use of renewable energy,
- assessing technical and economical opportunities to use renewable energy.

TARGET GROUP

Individuals within companies, organizations, and authorities who are engaged in planning, operating or evaluation of renewable energy projects or who are involved in financing, promotion, legal licensing of facilities for the use of renewable energy or environmental issues.

ADMISSION REQUIREMENTS

Admission requirements are: a Baccalaureate's degree, Magister's degree, or a diploma or equivalent in a relevant area of specialty and a minimum of 2 years of professional experience. Persons holding an equivalent educational and professional qualification may also be admitted.

FINAL DEGREE

The MSc Program is concluded by writing a Master´s Thesis. Achievement of the final degree **"Master of Science (MSc)"** granted by the Vienna University of Technology.

ACCREDITATION

Accredited by **ASIIN** (Accreditation Agency for Study Programs in Engineering, Informatics, Natural Sciences and Mathematics).

LANGUAGE OF INSTRUCTION

English

DURATION

The part-time program is presented in modules and takes four semesters.

COUNTRY MODULES

To provide the participants with in-depth knowledge on energy markets in CEE, tailor-made country modules are an essential part of this MSc Program. Within the scope of these country modules participants may opt currently for Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia, and Ukraine. The schedule will include lectures in these countries as well as excursions.

FACULTY

Individuals within companies, organizations, and authorities who engage in planning, financing, promoting or operating facilities for the use of renewable energy or who are involved in environmental issues with regard to renewable energy: university teachers, staff members of companies and organizations, government agents and stakeholders, legal experts, bankers, and economists.

I had the pleasure to participate in this unique program in its first matriculation year 2005. From the very beginning this program was highly valuable while also improving permanently due to maturity, most recently honored by the ASIIN accreditation.

Dr. Günter Maier, MSc
Alumnus Class 2005–2007

Renewables make sense ...
Energize your future!

Long-term, sustainable development would be unthinkable without renewable energy sources and efficient use thereof. Europe is world leader in terms of environmental technology and use of renewable energy, and should strive to defend this position. In this quest, the MSc Program can render a valuable contribution by integrating our neighbours in partnership towards joint European action.

Dr. Franz Fischler
President Ecosocial Forum Europe and Ecosocial Forum Austria
Former EU Commissioner

MSc Program

Renewable Energy in Central & Eastern Europe

Vienna University of Technology | Energiepark Bruck/Leitha

Class 2013–2015

PROGRAM START

October 03, 2013

DURATION AND TIME SCHEDULE

The part-time program is presented in modules and takes four semesters.

LOCATIONS

The MSc Program is held on several locations in different countries: Vienna, Bruck/Leitha, Güssing (Austria) and at the sites of the country modules: Bratislava (Slovakia), Györ (Hungary), Kiev (Ukraine), Krakow (Poland), Ljubljana (Slovenia), Prague (Czech Republic), and Zagreb (Croatia).

1st SEMESTER		2nd SEMESTER		3rd SEMESTER		4th SEMESTER	
Thu	Oct 03, 2013	Thu	Mar 13, 2014	Mon	Oct 13, 2014	Fri	Mar 28, 2015
Fri	Oct 04, 2013	Fri	Mar 14, 2014	Tue	Oct 14, 2014	Sat	Mar 29, 2015
Sat	Oct 05, 2013	Sat	Mar 15, 2014	Wed	Oct 15, 2014	Sun	Mar 30, 2015
Sun	Oct 06, 2013			Thu	Oct 16, 2014		
		Thu	Apr 10, 2014	Fri	Oct 17, 2014	**Master's Thesis**	
Fri	Oct 25, 2013	Fri	Apr 11, 2014	Sat	Oct 18, 2014		
Sat	Oct 26, 2013	Sat	Apr 12, 2014			**Graduation**	
Sun	Oct 27, 2013			Fri	Nov 14, 2014	November/December 2015	
		Thu	May 15, 2014	Sat	Nov 15, 2014		
Mon	Nov 11, 2013	Fri	May 16, 2014	Sun	Nov 16, 2014		
Tue	Nov 12, 2013	Sat	May 17, 2014				
Wed	Nov 13, 2013			**Country Module**			
Thu	Nov 14, 2013	**Country Module**		Fri	Dec 12, 2014		
Fri	Nov 15, 2013	Thu	Jun 19, 2014	Sat	Dec 13, 2014		
Sat	Nov 16, 2013	Fri	Jun 20, 2014	Sun	Dec 14, 2014		
		Sat	Jun 21, 2014				
Fri	Dec 06, 2013	Sun	Jun 22, 2014	Fri	Jan 24, 2015		
Sat	Dec 07, 2013			Sat	Jan 25, 2015		
Sun	Dec 08, 2013			Sun	Jan 26, 2015		
Mon	Jan 20, 2014			Mon	Feb 24, 2015		
Tue	Jan 21, 2014			Tue	Feb 25, 2015		
Wed	Jan 22, 2014			Wed	Feb 26, 2015		
Thu	Jan 23, 2014			Thu	Feb 27, 2015		
Fri	Jan 24, 2014			Fri	Feb 28, 2015		
Sat	Jan 25, 2014			Sat	Mar 01, 2015		

Subject to modification

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Energize your future!

TUITION FEE

The tuition fee for the MSc Program is **EUR 19,000** (excluding travel expenses and cost of room and board).

INFO SESSIONS

Presentations of the MSc Program will be held in the form of info sessions. During these info sessions the Academic Director, program managers and alumni provide you with in-depth information on the program and look forward to answering your questions.

Mon Mar 18, 2013 6.00 pm
Tue May 28, 2013 6.00 pm

Please register at newenergy@tuwien.ac.at

ADMISSION/APPLICATION

Application Deadline
Fri Jun 28, 2013

Admission Interviews
Tue May 14, 2013
Tue Jul 09, 2013
Wed Jul 10, 2013

Applicants are kindly requested to block these dates on their calendars for their individual interview (approximately 30 minutes).

Download of the application form is available on our website.

Please submit your application to
Vienna University of Technology
Continuing Education Center
Operngasse 11/017
A-1040 Vienna

FACULTY

Dr. **Amela Ajanovic** Vienna University of Technology
Dr. **Hans Auer** Vienna University of Technology
Univ.Prof.Dr. **Günter Blöschl** Vienna University of Technology
Univ.Prof.Dr. **Anton Burger** Catholic University Eichstätt-Ingolstadt
MR Dr. **Gerhard Burian** Federal Ministry of Economics and Labour
Dipl.-Ing. **Hubert Fechner** MAS, MSc FH Technikum Wien
Univ.Prof.Dr. **Anton Friedl** Vienna University of Technology
Univ.Prof.Dr. **Wolfgang Gawlik** Vienna University of Technology
Prof.Dr. **Adam Gula** AGH University of Science and Technology Krakow
Univ.Prof.Dr. **Reinhard Haas** Vienna University of Technology
Dr.in **Martina Handler** Austrian Society for Environment & Technology
Ass.Prof.Dr. **Michael Harasek** Vienna University of Technology
Mag. **Edith Hofer** LL.M. Energy-Control GmbH
Dipl.-Ing. **Marcus Hummel** Vienna University of Technology
Doc.Ing. **Jaroslav Knapek** CSc Czech Technical University Prague
Dr. **Marek Kobialka** Vienna Insurance Group
Dr. **Lukas Kranzl** Vienna University of Technology
Dr. **Hermann Krauß** Dr. Krauß ZT GmbH
Dipl.-Ing. **Martin Krill** Profes - Professional Energy Services GmbH
Dipl.-Ing. **Thomas Lewis** energieautark consulting gmbh
Mag. **Robert Maier** Raiffeisenlandesbank Niederösterreich Wien AG
Dr. **Gábor Milics** MSc University of West Hungary
Univ.Prof.Dr. **Martin Mittelbach** Graz University of Technology
Univ.Prof.Dr. **Nebojsa Nakicenovic** Vienna University of Technology
Franko Nemac BSc, El.Eng. Agencija za prestrukturiranje energetike
Univ.Prof.Dr. **Miklós Nemény**i Ph.D, DSc University of West Hungary
Dr. **Mario Ortner** IC-Projekte Projektentwicklung und Management GmbH
Ing. **Werner Panhauser** Hydroconstruct GmbH
Dr. **Christian Panzer** Vienna University of Technology
Univ.Prof.Dr. **Bernhard Pelikan** Vienna University of Natural Resources and Applied Life Sciences
Univ.Prof.Dr. **Reinhard Prenner** Vienna University of Technology
Dipl.-Ing. **Georg W. Reinberg** Architekturbüro Reinberg ZT GmbH
Dr. **Gustav Resch** Vienna University of Technology
Dipl.-Ing. **Rusbeh Rezania** Vienna University of Technology
Dr. **Friedrich Stastny** Freelancer
Ass.Prof.Dr. **Karin Stieldorf** Vienna University of Technology
Mag. **Hannes Taubinger** Anton Kittel Mühle Plaika GmbH
Prof.Dr. **Pall Valdimarsson** Atlas Copco Gas and Process Division Geothermal Competence Center
Dipl.-Päd.Ing. **Werner Weiss** AEE INTEC
Dipl.-Ing. **Lukas Weißensteiner** RP Global Austria
Dr.(ETH) **Arthur Wellinger** Triple E&M
Dr. **Richard Zweiler** Renewable Energy Network Austria

This represents a selection of the faculty of class 2012–2014.

PERSONAL ADVISORY SERVICE & APPLICATION

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Dipl.-Ing. Ralf Roggenbauer, BSc MES

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