



**Energize
your future!**

MSc Renewable Energy Systems

TU Wien | Energiepark Bruck/Leitha

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



Since
2005

MSc
Renewable
Energy Systems



Develop the energy systems of tomorrow!



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

» Renewable energy and energy-efficiency improvements are the key issues for heading toward sustainable energy systems. In recent years, especially electricity generation from variable renewable energy sources such as wind and solar has increased in many countries world-wide. In the EU, renewables have become No. 1 in electricity generation. The next challenge is sector integration, using excess electricity from renewables to also provide fuels for mobility and heating. One core objective of this post graduate Master's program is to train experts who will be able to cope with this challenge. «

Expertise for the most important topic of your generation

Identifying pathways for heading towards sustainable energy systems is one of the major challenges of our time. The core role in this context play renewable energy technologies, such as wind, biomass, solar, hydro and some others. In addition, decentralisation, digitalisation and the wish of many energy consumers for more democratic energy supply will lead to lasting changes in the energy sector.

Integrating all the usable renewable energy systems available into already existing grids and furthermore building new intelligent grids is another main challenge of this generation.

The demand in the fast growing renewables sector for well-founded knowhow has increased. The complementary strengths of the TU Wien and Energiepark Bruck/Leitha partnership make this interdisciplinary MSc Program an outstanding opportunity to satisfy the market demand worldwide.

This part-time master's program is designed to give the participants the necessary skill-set to become experts in their respective fields of interest and to fathom a comprehensive view on the global market situation in order to contribute to a long-lasting change.

Graduates of this program have the tools to become experts in:

- Technical aspects of all renewable energy sources
- The legal as well as economic challenges and opportunities of the global energy market
- The big picture of the ongoing energy transition

TU WIEN

Technology for People – Developing scientific excellence and enhancing comprehensive competence

The TU Wien – 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 Wien reach back more than 200 years: research, teaching, and learning are state-of-the-art.

ENERGIEPARK BRUCK/LEITHA

Think Globally, Act Locally – more than 25 years of experience in the field of renewable energy

The association Energiepark Bruck/Leitha was established in 1995 and acts as an innovation center for renewable energy, energy efficiency, climate protection and regional development. Since then a wide range of renewable energy projects have been realized.

FURTHER PARTNERS

Tailor-made country modules are offered to gain in-depth knowledge on energy markets in selected European countries. Previous country-specific contributions have been made by: AGH-University of Science and Technology (Krakow), Czech Technical University (Prague), Ege University (Izmir), Hamburg University of Technology (Hamburg), University of West Hungary (Sopron), ApE-Agencija za prestrukturiranje energetike (Ljubljana), BGWEA Bulgarian Wind Energy Association (Sofia), and Energetski Institut Hrvoje Pozar (Zagreb).

Curriculum

<p>MODULE 1 Introduction on Renewable Energy</p>	<p>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</p>
<p>MODULE 2 Biomass, Biofuels & Biogas</p>	<p>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</p>
<p>MODULE 3 Solar Energy – Solar Heating & Photovoltaics</p>	<p>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</p>
<p>MODULE 4 Geothermal Energy, Wind Power & Small Hydro Power</p>	<p>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</p>
<p>MODULE 5 Efficient Energy Use & Thermal Building Optimization</p>	<p>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</p>
<p>MODULE 6 General Legal & Economical Frameworks</p>	<p>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</p>
<p>MODULE 7 Integration of Renewable Energy Sources into the Energy System</p>	<p>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 • Tailor-made country modules to gain in-depth knowledge on energy markets in selected European countries</p>
<p>MODULE 8 Management & Soft Skills</p>	<p>Operative organization, team building • Self management, conflict management • Information work and opinion forming, media relations • Civic participation • Presentation, moderation</p>
<p>MODULE 9 Perspectives on the Use of Renewable Energy</p>	<p>Developments in world energy consumption • Future technologies • Technology assessment • Environmental protection and environment-related issues</p>
<p>MODULE 10 Master's Thesis</p>	<p>A Master's Thesis is written relating to the student's occupational activity and focusing on the feasibility of practical implementation.</p>

Program, Objectives and Goals

PROGRAM OBJECTIVES: With the MSc Program the participants acquire knowledge and competence for

- The planning and operating of facilities using renewable energy sources
- Understanding Economic and legal frameworks concerning renewable energy topics
- Strategies and means to promote energy transition and system integration
- The future assessment of environmental, technical and economic developments of renewable energy systems

TARGET GROUPS: Individuals within companies, organizations, and authorities who are engaged in planning, operating or evaluation of renewable energy projects and who plan to engage in the necessary transition towards sustainable energy solutions. Furthermore, professionals who are involved in financing, promotion, legal licensing of facilities for the use of renewable energy or environmental issues.

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 TU Wien.

ADMISSION REQUIREMENTS

- Completion of a subject-related study program in technical and natural sciences, economics or law at a recognized Austrian or
- Foreign post-secondary institution of education and a minimum of 2 years of professional experience
- Persons holding an equivalent educational and professional qualification may also be admitted

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. Dynamic on-site lectures are accompanied by interactive online modules to facilitate international participation.

COUNTRY MODULES: To provide the participants with in-depth knowledge on energy markets in Europe, tailor-made country modules are an essential part of this MSc Program. Within the scope of these country modules currently these countries are offered alternating: Bulgaria, Croatia, Czech Republic, Germany, Hungary, Poland, Romania, Slovakia, Slovenia, and Turkey. The schedule will include lectures in these countries as well as excursions allowing for a cross-national view on the renewables market and conveying first-hand knowledge.

FACULTY: Internationally recognized scientists and professional experts are members of this top-class faculty, based on their sound interdisciplinary specialized knowledge or on their extensive practical experience in the field of renewable energy sources. As a result, the faculty is diverse and extremely dynamic preparing our graduates to face future challenges.

Join our international network for renewable energies!



Elizabeth Rodriguez Bringas, MSc
Alumna Class 2016–2018

»» This master's program is an excellent program that focuses on the technical aspect, the policies and social impacts and the economical aspect of renewables. Working with the experts of the faculty offers an opportunity for networking, mentoring and learning about the real challenges and difficulties on the path towards decarbonization. Since this program is international it also allows you to meet people from all over the world who are united by the same passion and interest to make a change in the way energy is produced, delivered and used. ««



Dechawat Tamaneewan, MSc
Alumnus Class 2017–2019

»» This program has fulfilled crucial knowledge that helps me in my profession as a renewable energy engineer. One thing I find specifically valuable is the connections I gained during the program: I got to know many lecturers with a high level of expertise in specific fields who help me with my current project even when I'm back to Thailand. All of my fantastic fellow students share the same interests, have become good friends and made my life abroad more comfortable and entertained. I am glad to be a part of the program and the inspiring network. ««

Highlights

- Internationally required know-how
- Unique faculty from science and industry
- Close cooperation with the industry
- Attractive career prospects
- Global alumni network
- High reputation & internationally recognised accreditation
- Over 25 years of experience by our partner Energiepark Bruck/Leitha
- Special activities outside the curriculum

Student's Profile

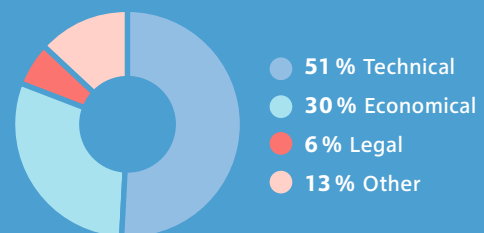
295 Students & Alumni

Nationalities of students and alumni: **50**

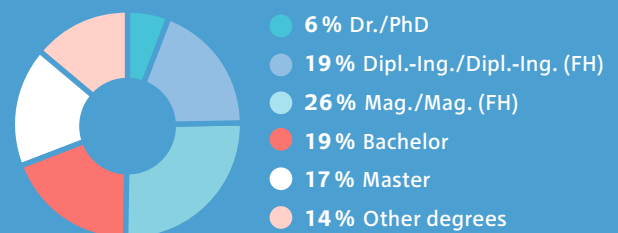
Average age **35** years

Share of international students: **61%**

Background



Academic degree



DI Theresia Vogel

Managing Director, Austrian Climate and Energy Fund

» Climate Crisis is changing the whole picture – we have to get used to new players, technologies, responsibilities and procedures within collecting energy resources on a global scale. Alumni of this Master's program will have it in their concept to adapt to future challenges. Education is the key factor in that game. «

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Class 2021–2023

DURATION AND TIME SCHEDULE:

The part-time program is presented in modules and takes four semesters. Blocked modules and weekend lectures facilitate compatibility with professional life. Lectures take place on 4–6 days a month from 9am–5pm.

HIGHLIGHTS:

- Energy market related excursions and Country Modules
- Regular extracurricular activities
- Dynamic on-site lectures are accompanied by interactive online modules

NEXT PROGRAM START:

November 4, 2021

LOCATIONS:

The MSc Program is held on several locations in different countries: Vienna, Bruck/Leitha and at the sites of the country modules of selected European countries: e.g. Bratislava (Slovakia), Bucharest (Romania), Hamburg (Germany), Izmir (Turkey), Krakow (Poland), Ljubljana (Slovenia), Mosonmagyaróvár (Hungary), Prague (Czech Republic), Varna (Bulgaria), and Zagreb (Croatia).

Schedule

FIRST SEMESTER	SECOND SEMESTER	THIRD SEMESTER	FOURTH SEMESTER
<p>THU Nov 4, 2021 FRI Nov 5, 2021 SAT Nov 6, 2021 SUN Nov 7, 2021</p> <p>MON Dec 13, 2021 TUE Dec 14, 2021 WED Dec 15, 2021 THU Dec 16, 2021 FRI Dec 17, 2021 SAT Dec 18, 2021</p> <p>THU Jan 13, 2022 FRI Jan 14, 2022 SAT Jan 15, 2022 SUN Jan 16, 2022</p> <p>THU Feb 10, 2022 FRI Feb 11, 2022 SAT Feb 12, 2022 SUN Feb 13, 2022</p>	<p>THU Mar 10, 2022 FRI Mar 11, 2022 SAT Mar 12, 2022 SUN Mar 13, 2022</p> <p>Country Module I THU Apr 7, 2022 FRI Apr 8, 2022 SAT Apr 9, 2022 SUN Apr 10, 2022</p> <p>MON May 9, 2022 TUE May 10, 2022 WED May 11, 2022 THU May 12, 2022 FRI May 13, 2022 SAT May 14, 2022</p> <p>THU Jun 9, 2022 FRI Jun 10, 2022 SAT Jun 11, 2022 SUN Jun 12, 2022</p>	<p>THU Sept 15, 2022 FRI Sept 16, 2022 SAT Sept 17, 2022 SUN Sept 18, 2022</p> <p>THU Oct 13, 2022 FRI Oct 14, 2022 SAT Oct 15, 2022 SUN Oct 16, 2022</p> <p>THU Nov 10, 2022 FRI Nov 11, 2022 SAT Nov 12, 2022 SUN Nov 13, 2022</p> <p>THU Dec 8, 2022 FRI Dec 9, 2022 SAT Dec 10, 2022 SUN Dec 11, 2022</p> <p>THU Jan 5, 2023 FRI Jan 6, 2023 SAT Jan 7, 2023 SUN Jan 8, 2023</p>	<p>Country Module II THU Apr 13, 2023 FRI Apr 14, 2023 SAT Apr 15, 2023 SUN Apr 16, 2023</p> <p>Master's Thesis Mar 2023–Aug 2023</p> <p>Graduation Nov/Dec 2023</p> <hr/> <p>Vienna Bruck/Leitha Online</p>

Subject to modification

Admission

TUITION FEE

EUR 19,500 (VAT-free) including course materials, iPad Air, and refreshments during breaks. The tuition fee does not include the cost of trips and overnight stays.

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.

ONLINE	Jan 26, 2021	6.00 pm
	Mar 25, 2021	6.00 pm
	Jun 1, 2021	6.00 pm
	Oct 14, 2021	6.00 pm
TU WIEN	Apr 22, 2021	6.00 pm
	Sept 21, 2021	6.00 pm

Registration: newenergy@tuwien.ac.at

Admission/Application

Application Deadline: June 30, 2021

Start Your Online Application:

<https://newenergy.tuwien.ac.at>

After receiving your complete application, an individual admission interview with the Academic Director and the Program Management is planned. Admission interviews will take place after individual appointment.

PERSONAL ADVISORY SERVICE

TU Wien | Continuing Education Center

Mag. Doris Guttmann

Program Manager

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Energiepark Bruck/Leitha

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NEWSLETTER: *Subscribe to our quarterly NewEnergy-Letter and receive the latest news on our MSc Renewable Energy Systems:*



FACULTY

DI Dr. Amela Ajanovic – TU Wien
Dr. Horst Brandlmaier, MBA OeMag – Abwicklungsstelle für Ökostrom AG
DDI Jan W. Bleyl – Energetic Solutions
Univ.Prof.Dr. Anton Burger – Catholic University Eichstätt-Ingolstadt
MR Dr. Gerhard Burian – formerly Federal Ministry of Science, Research and Economy
Stefka Christodulova, M.A. – Wit4Grit e.U.
Dr. Benedikt Ennsner – Federal Ministry of Science, Research and Economy
FH-Prof. DI Hubert Fechner, MAS, MSc – FH Technikum Wien
DI Alexander Fischer MSc – TB Fischer GmbH
Dr. Anton Friedl – TU Wien
DI Dr. Werner Friedl MBA – TU Wien
Univ.Prof.Dr.-Ing. Wolfgang Gawlik – TU Wien
Univ.Prof. DI Dr. Reinhard Haas – TU Wien
DI Roger Hackstock – Energy Academy & Freelance Energy Policy Consultant
Dr. Martina Handler – Wirkerei
Ass.Prof. DI Dr. Michael Harasek – TU Wien
Priv.-Doz. DI Dr. Christoph Hauer – Vienna University of Natural Resources and Applied Life Sciences
DI Marcus Hummel – e-think, Zentrum für Energiewirtschaft und Umwelt
Dr. Marek Kobialka – Vienna Insurance Group
DI Dr. Lukas Kranzl – TU Wien
DI Andreas Krenn – Energiewerkstatt
DI Martin Krill – Profes, Professional Energy Services GmbH
Ing. Josef Lampl MBA – Geppert GmbH
Prof. Dr. Gerfried Jungmeier – Joanneum Research, Graz
Mag. Robert Maier – Raiffeisenlandesbank Niederösterreich Wien AG
Ing.Mag. Helmut Maislinger – Energiewerkstatt (EWS)
DI Michael Mandl – tbw research GesmbH
Dr. Gábor Milics, MSc – USZéchenyi István University
Univ.Prof.Dr. Martin Mittelbach – Graz University of Technology
Gerhard Mütter MSc – ALTESO GmbH
Univ.Prof.Dr. Miklós Neményi Ph.D – USZéchenyi István University
Mag. Karl Newertal – BDO Österreich
Dr. Carlo Obersteiner – Wienstrom GmbH
DI Dr. Mario Ortner – ic-Projekte Projektentwicklung & Management GmbH
DI Dr. Christian Panzer – CPE-Thinktank e.U.
Univ.Prof.Dr. Bernhard Pelikan – Vienna University of Natural Resources and Applied Life Sciences
Dr Hermann Pengg – Audi AG
Dr. Gerhard Piringer – University of Applied Sciences Burgenland
Jasmine Ramsebner MSc – TU Wien
DI Dr. Reinhard Rauch – Karlsruher Institut für Technologie (KIT)
DI Georg W. Reinberg – Architekturbüro Reinberg ZT GmbH
DI Dr. Gustav Resch – TU Wien
Dr. Rusbeh Rezanian – Wien Energie GmbH
Dr. Bas van Ruijven – International Institute for Applied Systems Analysis (IIASA)
Dr. Fabian Schipfer – TU Wien
Dr. Friedrich Stastny – Freelancer
Thomas Steinberger MSc – AFRY Management Consulting Austria GmbH
Ass.Prof. DI Dr. Karin Stieldorf – TU Wien
Prof.Dr. Páll Valdimarsson – Pvald ehf
Dipl.-Päd.Ing. Werner Weiss – AEE INTEC
DI Lukas Weißensteiner – RP Global Austria

This represents a selection of the faculty of class 2019–2021.

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*Study in the most liveable
city in the world: Vienna!*



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