Division of Mineral Resources and Raw Materials Engineering

RWTH AACHEN UNIVERSITY

Sustainable Energy Supply

Master of Science

Thinking the Future
Zukunft denken

Sustainable Energy Supply

Master of Science

Germany's goal to transition towards sustainable energy inspires many universities to offer new courses specifically to fulfill the particular needs that arise in this process. A great number of these academic offers focus on singular aspects of the problem, such as the utilization of biomass.

In opposition to that the Master course "Sustainable Energy Supply" is aiming a much more comprehensive skills profile. It is characterized in particular two unique factors:

- Interdisciplinary – In comparison to the typical „Energy-Subjects," Mechanical Engineering and Electrical Engineering, this degree course in Sustainable Energy Supply considers matters from all different angles and accross subjects
- Individualized specialization due to being able to choose electives from a wide variety of subjects – Students may create their own highly individualized schedule, choosing from three different areas – Raw Materials, Mechanical Engineering and Electrical Engineering.

By working together with the faculties of Mechanical Engineering and Electrical Engineering, this course of study offers students the opportunity to choose individual specializations on one hand while at the same time providing them with a subject-specific foundation, which all students acquire in compulsory classes.

Great importance is attached to understanding the complexity of the energy supply field, which is influenced by many factors, including the extraction of raw materials to be used as energy carriers, their processing and distribution as well as economic aspects. All of these separate areas are treated in combination in a special compulsory class, the planning seminar. Here, all future engineers have to come together in groups to plan and evaluate an entire energy-generating facility. To do this, they take on the role of staff in an engineering office, who have to deliver results while working against a deadline. What could better prepare these future professionals if not a program held under realistic conditions?

Characteristics of the course of studies

In the Sustainable Energy Supply Master‘s course of study, students will be given the opportunity to plan their own personal energy transition. By having a great selection of subjects at their disposal and also the freedom to create highly individual schedules, every graduate will have gained a distinct pool of competencies at the end of their studies. Nevertheless, there is one goal in their minds: to bring success to Germany‘s energy transition!

Degree Content

The Master‘s program „Sustainable Energy Supply“ comprises four areas of study: raw materials, mechanical engineering, electrical engineering, and a non-technical area of study. Students must complete various mandatory and elective courses from all of the four areas, but there are not regulations on when and in what order these areas are to be completed. The final components of the program are the Master‘s thesis and an industrial internship. It is possible to combine the internship and the Master‘s thesis, i.e. the internship research and activities form the basis for the Master’s thesis.

Master‘s thesis
internship (50 days)

Mechanical Engineering:	**Raw Materials:**	**Electrical Engineering:**	**Non-technical Fields:**
Power plant technology	Fuel processing	Electrical grids	Energy industry
Solar energy	Geoenergy	Wind energy	Economy
Energy technologies	Secondary raw materials	Photovoltaics	Simulation technology
Hydropower	Deposits	Electricity supply	

Mandatory module:
Planning seminar, Technology assessment, Bioenergy, Energy conversion

Exchange Programs

Every year, more than 300,000 students study or train under the Erasmus+ umbrella – over five million students have directly benefitted since the launch of the programme in 1987. The Higher Education Impact study found that 80 percent of Erasmus+ graduates are employed within three months of graduation, with 72 percent stating their Erasmus+ experience helped them land their first job.

The ERASMUS+ program enables students to study at different universities abroad so that they may gain the best possible qualifications for their future careers. Not only in Germany is the topic of energy of great importance. Whether the Scandinavian countries such as Finland or Norway, or our immediate European neighbours – the department maintains good partnerships with many different European universities.

Career Prospects

Leaving university as well-trained engineers in the field of sustainable energy supply, the graduates will play an important role in achieving a successful transition toward sustainable energy worldwide. It doesn‘t matter where exactly in this complex system they start their careers. It is the interaction between all the different players that will lead to success. Due to their multi-disciplinary education and training, the graduates can either function as intermediaries between the different professional groups or focus on a distinct subject area.

In addition to the big energy producers and network providers, smaller companies are also looking for qualified staff. More and more it the interconnections between decentralized facilities matter; and this is exactly what the well-trained engineers bring to the table with their individualized specializations.

Due to the increasing scarcity of fossil fuels and the rising energy needs of the ever-growing world population, professionals who have received interdisciplinary education and training and therefore have an ability to see the big picture are in high demand.

Examination Regulations

Regulations that apply for all Bachelor and Master courses of study as well as detailed information about the necessary documentation of required language skills can be found in RWTH’s Comprehensive Examination Regulation. Examination regulations are only published in German as they are legally binding. Subject Specific Exam Regulations regulate academic goals, the course of study layout, and exam procedures.

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Where can I find more information?

Student Advisory Service:

Sustainable Energy Supply:
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Student council of the department:

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