The electric grid in Sweden and in Europe is facing a great shift. The electric transmission system is accommodating an increasing share of renewable energy sources. Qualified professionals in the energy field are in great demand. The Master Programme in Renewable Electricity Production is a unique programme, closely connected to both research and industry.

The Master Programme in Renewable Electricity Production offers an interesting education in state-of-the-art electrical power systems and renewable electricity generation. Uppsala University’s energy research is world leading in many areas and there is close cooperation between research and industry.

The Master Programme in Renewable Electricity Production is the only of its kind in Sweden. If you are interested in the relationship between technology and environment, and want to mix traditional engineering skills with current research in the area of electric power then you can expect two fruitful years in this programme. Our hope is that students should be proud of their education and develop an attractive profile for the labour market after graduation.

ABOUT THE PROGRAMME

The Master Programme in Renewable Electricity Production aims to provide you with:

- A good theoretical background and practical experience of Power Systems and renewable electricity generation.
- An insight of research and industry perspectives.
- A network with potential employers during training, both in academia and industry.

As a student in the programme you will be put in contact with some of the main actors in the Swedish industry through study visits and guest lectures. At the same time, there are opportunities for Master’s Thesis and project courses in industry and research groups. However, it is up to you to make contact and show interest.

The Master’s programme requires that a certain percentage of the courses you select are in a topic related to renewable power generation. In addition to this, you have the opportunity to choose different courses according to your own interest and create your own unique profile. Through your choice of courses you can also decide if you want to aim for a career in research or industry.
You will gain theoretical and practical knowledge in the field of electric power systems. By the time you graduate, you will have the following skills:

- Be able to perform Power System analysis of large and small electrical systems.
- Size the new components in the electric grid.
- Project expansions of the electricity grid.

Designing wind and wave power plants and the electric systems to connect them to the grid.

Technical skills are important, but also soft skills. Project management is also part of the programme. This will be very useful during your studies and for your professional career.

**DEGREE**

The programme leads to a Master of Science (120 credits) with Renewable Energy Production as the main field of study.

**INSTRUCTION**

Most of the courses are given by active researchers in the field, which guarantees your knowledge and understanding of the latest research. Some courses also have guest lecturers from industry and policy makers.

Courses are organised with different teaching methods, with instruction consisting of lectures, group exercises, laboratory exercises, seminars, project work and study visits. Several courses are studied in parallel. The programme takes place in Uppsala.

The language of instruction is English.

### COURSES WITHIN THE PROGRAMME

#### Year 1

In the first year, you will study project management and environmental technology as well as basic courses in various renewable energy generation. Examples of courses:

- Industrial Project Management
- Wind Power - Technology and Systems
- Wave power - Technology and Systems

#### Year 2

The second year, you will study advanced courses in electrical engineering and power systems. You will have more freedom to choose your courses and build your own profile. You will fine more systems-oriented courses. Examples of courses:

- Hydroelectric Power - Technology and Systems
- Solar Energy Technologies for Electricity Production
- Batteries and Storage
- Generator Design

The last semester is devoted to the 30 credit Master’s thesis required to obtain the diploma. It can be performed at a company or together with a research group at the university. There is also a 15 credit thesis at the end of the first year. It may be possible to obtain a Master’s degree worth 60 credits after one year.
The industry organisation "Svensk Energi" estimates that the energy sector in Sweden alone will require over 7 000 new positions in the next few years. The increase of renewable sources in the electric system is increasing worldwide. The need for well-trained engineers and technicians with expertise in electric power and renewable power generation is large - both in Sweden and abroad.

Examples of jobs suited for graduates of this Master’s programme:

- Project Manager
- Design engineer
- Researcher
- Consultant

Examples of possible employers:

- ABB/Siemens
- Policy makers/NGOs
- Vattenfall/E.ON /Fortum
- Pöyry/Sweco/ÅF
- McKinsey/Accenture
MASTER PROGRAMME IN RENEWABLE ELECTRICITY PRODUCTION

120 credits
Autumn 2017 100% Campus

Location: Uppsala

Application Deadline: 2016-01-15
Enrolment Code: UU-M1454
Language of Instruction: English

Requirements:

Academic requirements
A Bachelor’s degree, equivalent to a Swedish Kandidatexamen, from an internationally recognised university.
Also required is:

- 90 credits in electrical engineering including electric circuit theory, electromagnetism, electronics, power systems engineering and automatic control;
- 30 credits in mathematics including linear algebra, scientific computing, mathematical statistics, transform methods and multivariable calculus;
- practical experience of laboratory work and ability to use computer-based calculation tools, such as MATLAB, CAD (such as Solid Works) or FEM (such as COMSOL); and
- a basic course in mechanics.

Language requirements
All applicants need to verify English language proficiency. This is normally attested by an internationally recognised test such as TOEFL or IELTS with the following minimum scores:

- IELTS: an overall mark of 6.5 and no section below 5.5
- TOEFL: Paper-based: Score of 4.5 (scale 1–6) in written test and a total score of 575. Internet-based: Score of 20 (scale 0–30) in written test and a total score of 90
- Cambridge: CAE, CPE

Exemptions for students from certain countries.

Selection: Students are selected based on:

- a total appraisal of quantity and quality of previous university studies; and
- a statement of purpose (1 page).

Tuition fee paying students and non paying students are admitted on the same grounds but in different selection groups.

Fees: If you are not a citizen of a European Union (EU) or European Economic Area (EEA) country, or Switzerland, you are required to pay application and tuition fees. Read more about fees.

Application Fee: SEK 900
Tuition fee, first semester: SEK 72500
Tuition fee, total: SEK 290000