



Internship – Power Systems of the Future: Technologies and business models (f/m/d)

At Hitachi Energy our purpose is advancing a sustainable energy future for all. We bring power to our homes, schools, hospitals and factories. Join us and work with fantastic people, while learning and developing yourself on projects that have a real impact to our communities and society. Bring your passion, bring your energy, and be part of a global team that appreciates a simple truth: **Diversity + Collaboration = Great Innovation**

The changing energy landscape with increasing converter-interfaced, time varying renewable energy sources and electrification of transport, heating and industries challenges transmission and distribution system operators. Achieving a high share of centralized and distributed weather dependent renewables requires a paradigm change in the way the grids are planned, operated and serviced, bringing new performance requirements for all the relevant products and system solutions.

Our flexible work practices help you optimize personal and business performance while creating an environment where all employees can develop their skills and grow.

Additional information:

A research program entitled “Power Systems of the Future” investigates the mid- and long-term implications of the ongoing changes in power systems worldwide, primarily driven by the new renewables with power electronic grid interfaces, distributed resources, coupling of energy sectors and liberalization of energy markets. The team works with all business units on next generation concepts and solutions to be introduced to the market. Internship duration 9-12 months. Location: Baden, Switzerland.

Your responsibilities

Perform market analysis studies on various topics relevant to energy systems, with particular focus on renewables and smart grids.

Derive system and product requirements based on the market analysis.

Define high level functional architecture of possible innovative solutions to be introduced in the market in medium to long term.

Simulate future scenarios and technologies within an energy system.

Model emerging technologies at different power system levels (e.g. DC grids, ele

electrolyzers and fuel cells, demand response, etc.) using proprietary and commercial tools.

Develop, maintain and document new techno-economic assessment tools for simulating behavior of energy systems on different time scale.

Data collection (technology, markets, policy and regulations) for and building of future scenarios on regional and global scale.

Your background

Familiar with optimization solutions connected to the simulation tools

Experience with renewables and smart grids technologies, solutions and concepts

Background in the following power system topics:

-Steady-state and dynamic stability analysis and modelling.

-Fault analysis and power system protection.

-Energy and ancillary service markets.

Profound knowledge of and experience of programming in Matlab and Python.

Sufficient experience with one power system analysis software package (e.g. PowerFactory and DSL, Neplan, PSS/E, etc.),

Motivated and eager to learn more

Capable to carry out the work independently and be at the same time a good team player

Good communicator, written and oral proficiency in English

Currently pursuing an M.S. degree in electrical engineering or completed a similar M.S. degree less than 12 months ago.

More about us

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We serve customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, we pioneer technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. We are advancing the world's energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. Headquartered in Switzerland, we employ around 40,000 people in 90 countries and generate business volumes of approximately \$10 billion USD. www.hitachienergy.com

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