



Sustainable Electrical Power Engineering

Engineering studies have gotten a picture of being merely an immersion into a sea of hardware issues for men with a love for strange gadgets. More troublesome, it is sometimes heard that the engineers lack empathy and retain patriarchal leadership structures. Could the engineering guild really survive in today's society with such a reputation?

In recent time it has become ever so clear how much sustainability issues have come to concern the Jones. The ongoing refugee crisis, the plunge in consumer-retailer (or even business) trust following the Volkswagen scandal and the increasing clamors for actions against global warming are all subjects that have been placed high up on the agendas. The direct impacts of these more or less transitional events do not limit themselves to isolated areas of the society but touches the very core of it; namely the attitudes of its inhabitants. As a result, the sustainability issues have also become powerful tools for politicians to gain their voters' trust and employers to attract a possibly more idealistic labor force. In addition, the resulting legislation that follows in the tracks of these events often implies more stringent legislation – usually with substantial direct economic impacts for the ones not complying with the enforced laws. The way for an individual to deal with this as a competitor on the labor market must therefore be to gain knowledge in these questions.

For companies in electrical power businesses, CSR-questions do not limit themselves to social responsibility. Per definition, these companies operate on markets where their appliances and services are directly connected to the use of primary energy; possibly one of the largest environmental concerns and a demanding such to issue for legislators. Moreover, energy losses directly translate into economic losses and a potential loss of customers if the competitors can come up with a more cost efficient solution. Thus, developing efficient devices for the product portfolio is crucial challenge for this kind of companies to thrive. This insight is nothing that has struck the mentioned sort of companies just lately. On the contrary, there has always been a demand for knowledgeable electrical power engineers within the area of optimization. However, the incentives may have been pronounced differently and the chances to make the ideas come true not as good as today.

In the light of the past reasoning, there has been a long time for the academic institutions that educates the electrical power engineers to custom fit their courses and programs to the requirements of the society and companies on "energy aware" engineers. KTH is no exception and during my four years as a student at KTH much focus has been put on highlighting hardware efficiency issues. KTH has also proven to be eager to integrate more sustainability related topics earlier and in a broader sense into the education of their engineers. As an example, the bachelor program, *Energy and Environment* makes the students eligible for the Electrical Power Engineering Master, but also incorporate bachelor courses in environmental economics and ecology.

In conclusion, it is hard to conceive of a society where technological companies do not address sustainability issues. Rather, sustainability issues have always been on the agenda, but maybe limited to improving product efficiencies. Today, the same business needs to attract competent engineers that expect a meritocratic company structure, just working conditions within the sub-contractor companies, compliance with environmental laws and a will to develop products with little environmental impact. They need to succeed.