

## Topic#5



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The ancient Chinese are attributed with the following proverb 'If you are thinking a year ahead, sow a seed. If you are thinking 10 years ahead plant a tree. If you are thinking 100 years ahead, educate the people'. It is critical that the engineers are equipped with relevant knowledge and skills to effectively address the sustainability issues. The present need of the hour is not just an innovation but a sustainable innovation. Engineers have a bigger role to play to address these sustainability issues because many of the past technologies are not sustainable because of lack of awareness about environmental issues. Usage of Sulphur Hexafluoride in power system circuit breakers is one such example. It is a man made greenhouse gas that contributes to global warming. Present generation engineers played a key role in optimizing its usage and innovate an environmentally friendly alternate solution.

Being an engineer with knowledge in power systems makes me play an important role in these sustainability issues. Development of technologies like HVDC that can help to maximize the usage of energy from renewable energy sources is one such example. Electric Vehicles, solar power generation and wind power generation are some examples that reduced the consumption of fossil fuels. They had remarkable breakthrough in solving some sustainability issues. KTH offers courses like Wind Power Systems where students learn about wind energy and ways to set up wind farms. This helps to equip the engineer with basic ideas of developing sustainable solutions for the society like wind power. Developing wind farms to cater energy needs can help to reduce the carbon emission from the fossil fuel based power plants. Identifying more optimized ways to capture the energy from the wind can further help to exploit more wind energy.

Sufficient problem solving skills with motivation to provide sustainable solution is essential to solve a problem as an engineer. Problem solving skills are provided to the students studying at KTH and its up to students to effectively use them to address the sustainability issues of the society. I think they also provide motivation to consider the sustainability issues. For example one of my professors (Prof. Lennart Söder) who teach wind power systems pays additional tariff to Swedish utility to supply his house only renewable energy. This kind of examples provides motivation among students to understand the importance to address the sustainability issues and their responsibility as future Electric Power graduates from KTH.