

## TOPIC 5:

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From the beginning of the industrial revolution, the development of science and technology has brought about a qualitative change to the human beings' life. However, the negative damage to the nature is more and more obvious nowadays. The greenhouse effect, the Arctic Melt, human beings finally came to realize that we have made an overdraft to nature.

My major is electric engineering. Modern life depends on electricity, without electricity there will be no internet, no light, no vehicle. It's hard for modern humans to imagine what it would be like if there is no electricity, in a simple word, we will be "CRAZY". We are already used to enjoy the comfort and convenient from the electricity.

Electricity generation is an important topic we always focus on. We have many ways to generate electricity, by oil, gas, coal, solar, wind, hydro and so on. We have an intuitive grasp of sustainability issue in electricity is to develop the technology of generation by renewable resources. Also try to use electricity replace fuel, for example: the development of electric vehicles.

Now I'm working on a project based on Gotland, this project is about "Smart EV charging station". In order to meet the climate and energy goals, renewable energy and energy storage technology have developed significantly in recent years. For the environmental reason, the market of EV is expected to expand rapidly in the following years. That will lead to new changes in the grid and in electricity markets as well as the load demand will face essential growth. New and smart charging stations have to be designed to meet the expectations of society for cleaner energy and active participation of end users' in the market. We want to build a smart EV charging station which can lower the impact to the smart grid, for example: Charging battery banks of charging station from grid during off-peak hours.

I do think that KTH has done enough to prepare us for working with sustainability. I have so many courses named by environment. "Power

Generation, Environment and Markets” “The Sustainable Electric Power Engineer”. Last semester, I took a course “Power Systems and Environment”. In this course, my group project topic is “Copper Cable”, with this topic we discuss about copper cable’s environmental impact, and try to calculate how much it will cost if we replace copper cable by fiber cable. This project changed my mind about my major. I’m not very interested with my major before, because it seems that I’m not going to work as an engineer. I was always thinking about, if I don’t work as an engineer in the future, what will my study mean? Will it mean nothing? By this project, I thought even if I’m not going to work as an engineer, I still have knowledge which can help me to be an environmentalist, I know more about how to protect our planet.

It’s really important for us to recognize the importance of sustainability. Everyone should work and live with responsibility to our home ---- Earth.