

Sustainability

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Problems as global warming, constantly increasing pollution of air, dying out of lots of animal species or the depletion of the minerals in the soil represent challenges for the current engineer generation. In the developed countries there are many regulations that need to be followed by the companies in order to protect the environment. There will be increasing demand and awareness about the issue of sustainability and renewable resources coming from both governments and conscious consumers. Engineers will need to deliver more technologies, that will be both profitable and environmentally friendly. This will become the part of the design process.

In terms of electric (power) engineering one of the biggest changes to come are electric cars. The environmental improvement connected with getting rid of pollution coming from greenhouse gases, especially in big cities, will dramatically improve the living standard of their inhabitants. Renewable power resources with combination of improved energy storage will also play vital role, especially in prevention of global warming. Transportation vehicles and energy production facilities take care for a huge chunk of overall emissions and their shift to the more sustainable alternatives would solve a part of puzzle.

In the past it was always technology that shifted the environment. In the past centuries the main material for construction was wood. Majority of houses, boats and equipment were built using wood as a resource. Because of this, there very hardly any trees left in Europe (which leads to the fact that majority of the forests that are close to the cities are pretty young). But the technology went ahead, new building materials (bricks) have been used and new forests were planted.

Similar shift happened when the mankind switched from using the coal as the main resource to today's usage of the gas and oil. One can predict that these will also be relicts in several decades in the same manner as the wood and partially coal is today.

The knowledge I have gained from the course material increased my awareness of problems connected to sustainability. There are things as recycling, using communal transportation and buying local/organic food that everyone can do.

KTH provides very good frame for the topics related to sustainability. Teachers try to cover the problem in the rational way. One good example could be the analysis, whether the broad application of electric cars would be really beneficial in case of decreasing pollution

effects. It turned out that this is highly dependent on the energy production mix of the country/region where the car recharges. In certain cases can the car produce more secondary emissions than the regular combustion engine with filters. This can be obvious for electric power engineer, but for the majority of population can the fact that car “doesn’t produce” any greenhouse gases, because it’s charged by electricity, be taken as truth. This reflects the value of both KTH education and rational thinking based on facts.