

ETHICS CONCERNS OF CIRCULAR ECONOMY AND THE ENERGY TRANSITION

Given the ongoing rise of energy consumption worldwide we will need all sources of energy. Certainly the aim is to replace especially the use of coal, oil-products, natural gas by renewable energy sources. Nonetheless the renewable energy production needs raw materials such as rare earth materials, silicium and others which has created a questionable dependence on one country - China. Therefore a circular economy can contribute substantially to a save energy supply.

Recycling lowers the energy consumption: for instance in glass manufacturing using 80% of used glass saves 20% of energy need. Other products for lowering the energy need in the manufacturing process are iron and steel scrap, aluminium, paper etc. They reduce the energy need and the need for raw materials at the same time.

In order to guarantee the quality strict norms have to be imposed and controlled. Often reused materials in the manufacturing process are improving the quality of products (especially glass, paper and scrap). Therefore in these areas of productions there is no ethics concerns. To the contrary: by reusing the mentioned products quality can be improved and the energy need be lowered at the same time, which is good for the carbon footprint.

The energy transition requires for e-mobility, windmills and other processes enormous amounts of lithium, which is controlled by China at a level above 90%. China and Russia have moreover secured mines mainly in Africa and are dominating an increasing number of African states.

The US and Europe must speed up their attempts to get hold of mines. Some Latinamerican Countries such as Chile could be an option.

As it turned out, even the larger European states are not strong enough to act successfully on an international level, as France had to realize recently in Africa. Therefore it is advisable, that the EU gets the authorization from the member states to make contracts with countries or leading companies in such countries for the purchase of certain raw materials. The purchases of vaccines during the Covid-period may serve as an example. It is not the military might of Europe but the size of the market which may lead to acceptable deals.

However the capacities of mines for some products are currently not sufficient in the world. Europe needs absolutely the recycling of used lithium ion batteries for instance, which will be in the hundred thousands available on the market. These batteries are containing lithium, cobalt, nickel, aluminium and copper. Apart of the necessity of recycling these batteries, they are classified as hazardous waste.

Because of the problematic use of lithium ion batteries research is going on to develop other types of batteries. At least for the use as stationary batteries there are already alternatives on the market. For instance in July this year the worlds first type of an organic solid flow battery for being used to store electricity of solar power plants and windmills was presented and installed by the German company CMBLu Energy AG in the Province of Burgenland in Austria in cooperation with Burgenland Energie AG. It is a sustainable and affordable battery storage system which will absorb excess energy of a wind and solar park and feed energy

back when needed. Both companies are showing that a 100 % renewable energy system – powered by wind and solar energy – is possible.

The need for energy is still rising fast on a worldwide scale and the increase of renewable energy so far was only considerable enough to cover the additional need. The need for solar panels, windmill towers and motors is enormous. New high tension lines need permissions etc. It is not a turnaround yet! Therefore we still need to develop additional gas fields. Recently the Austrian company OMV AG has given green light to develop one of the largest European offshore natural gas fields in the Black Sea in Rumanian territory. Furthermore OMV has recently discovered the largest onshore natural gas field in Austria since 40 years with the potential of increasing its production by 50%. On the other hand the Netherlands are closing their largest natural gas field this year. The natural gas supply from Russia via Ukraine to Austria will most likely be stopped at the end of 2024, when the transit contract through Ukraine is coming to an end. Therefore reverse flow systems such as between Italy and Austria have to be finalized between Germany and Austria as well. The LNG terminal of Krk Island may serve additionally as a supplier.

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Zoom Event on Tuesday, 3rd October 2023 about "ETHICS CONCERNS OF CIRCULAR ECONOMY"