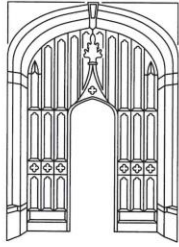


Climate Change and Climate Protection – Methanol helps!

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Klimawandel und Klimaschutz – Methanol hilft!

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One of the main difficulties in the debates on climate protection and the energy issue is how we deal with it – as a society, in politics and in industry. And not just nationally, but across borders, and especially not just in circles of the industrialised western world. The interests of the developing and emerging countries must be taken into account, not only in terms of the current state of development, but also in terms of future global developments. China is a good example of changes that can happen in a few decades.

1. Success factors for climate protection

Climate targets can only be achieved successfully if global, economic and social power relations are taken into account.

Politically: States such as Russia and Iran could not agree to total decarbonization because their economies are heavily dependent on the export of fossil fuels.

Economically: What value do all the companies and groups in heavy industry still have when their investments, fossil fuel fields, pipelines, refineries and factories can no longer be used – and how are their employees to be employed? Who can be politically and socially responsible for the resulting unemployment in the medium term? In some countries there would be the threat of state collapse.

Social: Already now, some people have the feeling that they are being left behind – while a privileged class benefits from energy-efficient buildings and drives around in electric cars, others are feeling the effects of rising electricity costs and have to fear for their diesel and affordable housing. In this way, social peace is endangered. France sends its greetings.

2. Fulfilling climate protection globally – also in the future

In the years to come, India and the African countries produce the largest additional CO₂ emissions if we do not provide them with substantial financial support to ensure that their economic development is as less climate-damaging or as climate-neutral as possible.

However, so far in the rich countries, there is no willingness to act accordingly.

It is also of little use if only individual countries, for example industrialised countries, achieve their climate targets. This will not stop climate change as long as no efforts are made in Africa and India. We must support these countries so that their economic development is as less climate-damaging as possible; therefore, we must look beyond national borders. This is also the case in Europe. That is why it

also makes sense when Germany trades emission rights with Bulgaria and Romania – this has nothing to do with indulgence trade, but is good for Germany, Bulgaria, Romania, Europe and the world.

But this requires an effort of everyone, not just states and politics.

3. Development and Climate Alliance

Politics cannot cope alone with the great demands of international commitment. We already have problems in providing development aid in the direction of the 0.7-percent-target that has been the subject of discussion for many years. For this reason, the private sector must become active. Already out of self-interest in a prosperous future. A lot has happened in this area recently. More than 250 companies in Germany have already joined the "Development and Climate Alliance" of the Federal Ministry for Economic Cooperation and Development since the end of 2018, including Munich Re, SAP, BMW, but also many saving banks and medium-sized companies. Outstanding is the recent announcement by Robert Bosch, a large industrial company and a member of the Alliance, that it will be fully climate-neutral by 2020. Companies that engage in this field have understood that they can achieve great effects with a reasonable financial commitment, e.g. when they compensate their business flights with high-quality compensation projects in non-industrialized countries.

By the end of 2019, we want to unite 1,000 companies in the initiative. This will not only contribute to climate protection in Germany and Europe, but also worldwide. Information on the Development and Climate Alliance can be found here:

<https://allianz-entwicklung-klima.de/mitmachen/>

Email: allianz-entwicklung-klima@giz.de

Join us. Send us your company's signed declaration of participation!

4. Regulation yes – but not arbitrary and value-destroying

The state will have to intervene in order to achieve the climate targets. But it must do so in a well-considered manner. At present, we are panicking for regulation, promoting supposedly sustainable investments, sanctioning others and thereby destroying great values, although we are achieving very little for climate as a whole.

5. Licence to operate

Under what conditions does society allow entrepreneurial activities? Actually, the state should associate regulation with ethical principles that a company automatically adheres to when it acts in accordance with these regulatory frameworks. Currently, due to supranational regulatory deficits, there are often no sufficient state requirements. And so there is tinkering without any structure: We are approaching the producers of electricity instead of those who consume a lot of electricity. We regulate the airline – not the consumer who flies. This is due to the balance of power: With strong national powers such as the US, Russia or Iran, no one wants to start a fight with. Politics does not want to turn strong groups of voters and strong players in the capital markets against them. We only start where little resistance is to be expected.

Because the states do not create any reasonable international framework conditions, but rather deal with power politics, compliance with economic ethics falls back on consumers and companies, so that goods and services must now also cover the ecological and social side of economic activity.

And additionally, financial regulation (keyword: Sustainable Finance) is now being used to create something that often does not pay off and directs payment flows into unprofitable investments! There are various examples in which investments were made with good intentions, but which were not economically viable and therefore not sustainable; various municipal utilities, for example, invested in renewable energies and became insolvent!

One would have to change the regulations in such a way that the "right" solution pays off. "Green investments" will often only pay off if state subsidies are paid or if there are noticeable reputation effects due to consumer pressure.

6. Total decarbonization leads to economic crisis

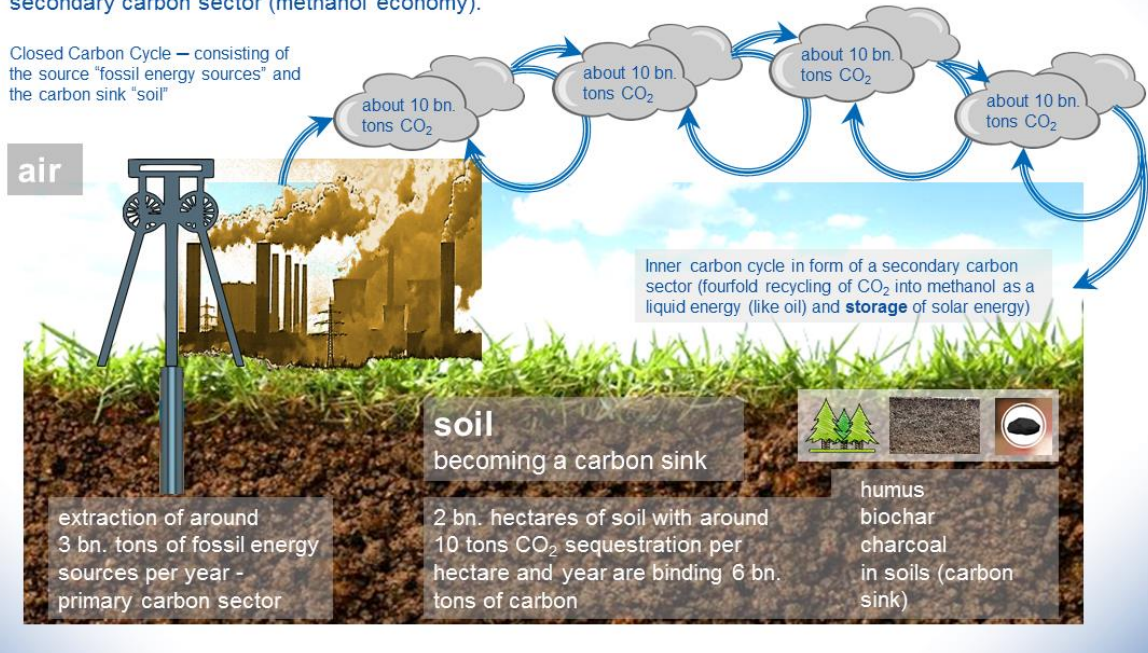
Globally, interests must be balanced: Complete refusal of fossil fuels would corner powers such as Russia and Iran that depend on their exports. With fatal consequences (including the risk of a so-called nuclear winter, i.e. the darkening and cooling of the Earth's atmosphere as a result of a limited use of nuclear weapons), which must be prevented at all costs!

Heavy industry in the industrialised countries would also be hard hit – what is to be done with the existing infrastructure? How should the jobs, the investments etc. be compensated? Solutions have to be found to achieve the climate goals without damaging the economy and industry.

Closed Carbon Cycle energy (future)

Preservation/ transformation of the industry sectors connected to fossil fuels within their current economic magnitude (power plants, heavy industry, chemicals, mobility sector, heating, ...). Basing the industries on two pillars: the primary carbon sector (fossil energy sources) and the secondary carbon sector (methanol economy).

Closed Carbon Cycle – consisting of the source "fossil energy sources" and the carbon sink "soil"



7. Recycling fossil fuels helps climate and economy

In my opinion, there's a solution:

We have to recycle CO₂ – and we have to recycle it several times (see figure above) – namely with inexpensive solar power from the hot deserts of the world. There, hydrogen can be produced cheaply via electrolysis, which can be combined with CO₂ to form methanol. Methanol is a liquid similar to petrol, similarly easy to handle, less toxic and can substitute all types of fuel and heating oil. It can even be used to power electric cars (equipped with fuel cells). Directly in front of us lies the conversion of the large segment of fossil energy sources in the direction of a methanol economy, a growth process of the sector that requires restructuring but opens up economic potential in the trillions. Europe and Africa can go ahead here in partnership. India and Africa can replicate the Chinese way to prosperity. The United Nations' Sustainable Development Goals can be reached by 2050 and the world population can be stabilised at 10 billion people by 2050. What is needed now is wise regulation and efficient and powerful investments.

We must use the sun in a manageable way in the future: Solar energy ⇒ Hydrogen ⇒ Synthetic Fuel ⇒ Energy storage. The future lies in the use of high-energy liquids. This is a segment with great potential – also for investors!