

Sustainable climate change with climate rescue within a few years and simultaneous low-cost energy transition based on existing combustion engine technology?

Is that possible?

Yes, it is possible, and this solution with a fast-growing biomass from Peru already existed about 12 years ago with the support of the German government and a pilot plant at the Karlsruhe Research Center.

Why has this solution failed or not been pursued?

The petroleum industry worldwide is omnipotent, and this concerns not only energy in the form of fuel for cars, airplanes, ships and power plants, but also almost all known forms of plastics and other chemicals. This means many hundreds of billions in sales on which entire countries (see Middle East, Russia, etc.) and industries depend for their existence. An environmentally friendly and affordable replacement of petroleum and fossil coal is therefore explicitly not desired by the petroleum lobby and these states and will be prevented with all power and emphasis until the fossil raw materials are depleted.

Why might this change now?

The people of the world and consumers are seeing the current acute climate change of unprecedented proportions and recognizing from it the impact on weather and increasingly severe and frequent climate disasters.

So where is the solution that no one seems to have heard of to date?

The solution has been growing in the Mediterranean for thousands of years and is called *Gynerium sagittatum* – see Wikipedia -, which everyone who has ever been to the Mediterranean knows and which looks like bamboo at first glance. It is believed that this grass plant came with the first explorers or settlers hundreds of years ago from Europe to the tropics, where it grew even faster and larger than in Europe due to the warmer climate. As described on Wikipedia, it is a grass plant that grows wild in the tropics, reaching a height of more than 10 meters within a year and becoming woody. This growth and the associated sequestration of CO₂ are unique in nature, and so this plant is suitable for cultivation on plantations, with annual harvesting and natural regrowth as with grass, which always grows back after mowing. A plantation with the size of 10 x 10 km thus produces about 500,000 tons of biomass annually and, repeating every year, binds the corresponding amount of CO₂ during the growth phase. The only challenge and limitation is that the growth data can only be achieved with cultivation in the tropics.

How can this plant, if cultivated on plantations, be used for the production of energy and at the same time save the climate?

The process for synthetic fuel production is not new in itself and was already used under Fischer-Tropsch synthesis - see Wikipedia - in the Third Empire for fuel production based on fossil coal and still provides the basis for fuels in South Africa today (see SASOL). On the basis of coal, the mature process is referred to as CTL (Coal-to-Liquid) and on the basis of biomass such as wood as BTL (Bio-To-Liquid). From the side of the industry it is always pointed out that this process is not ecological and economical, but this is not correct on the basis of Gynerium.

So the low-cost biomass that can be used to simultaneously sequester climate-changing amounts of CO₂ when grown industrially on a large scale and the mature technology already exist, and so what would the solution look like in concrete terms?

The basis is the industrial cultivation of the plant in the tropics on thousands of plantations to bind CO₂. Each of these plantations gets an energy self-sufficient pyrolysis plant, in which the biomass is vaporized and made transportable in the form of pyrolysis oil with simultaneous admixture of the ash with high energy density. Each plantation thus becomes its own "source of oil". This "pyrolysis crude oil" produced there is then transported, as is fossil crude oil today, to BTL refineries all over the world, where it is processed into truly CO₂-neutral synthetic fuels, which can also be used to operate ships for transport in an inexpensive and environmentally friendly (CO₂-neutral) manner.

How good and cheap are synthetic BTL fuels and chemicals compared to conventional fossil fuels and chemicals?

Synthetic BTL fuels have been extensively tested and approved by leading car manufacturers such as Mercedes, VW and even the US Air Force (B2 bomber). As a result, synthetic fuels, with even less particulate matter than diesel, burn much cleaner, even eliminating the need for regular oil changes in internal combustion engines.

Why has BTL not gained acceptance worldwide?

As mentioned at the beginning, the oil industry has no interest in an environmentally friendly CO₂-neutral competing product, which could be produced at the same cost or even more cheaply on a larger scale. Not only could the production of crude oil and fossil coal come to a standstill in the medium term, and thus OPEC's sources of income, but also the countless oil refineries worldwide would become worthless practically overnight. Many countries, especially in the Middle East, would become practically destitute and this lobby, with now practically unlimited financial means, would never allow that.

Against the backdrop of growing pressure from environmental associations, the petroleum industry has settled for the smallest justifiable "evil" of electromobility, which poses no serious threat to fossil fuels in the short, medium or even long term. As long as everyone goes along with it, this is feasible - with no benefits for the climate - because electromobility makes little sense without CO₂-neutral energy sources. Wind and solar energy remain controversial in their efficiency and expansion possibilities, and electric solutions also remain practically just a storage medium for fossil energy sources, except that the combustion engine is replaced by electric motors. This senseless restructuring of the automotive industry unfortunately brings nothing for the climate besides the "chewing bone effect" for the industry, billions in sales and a peace with the oil lobby.

What is the status now?

The pilot plant, which was co-financed by the German government at the time, has been technically mature at the Karlsruhe Research Center for about 10 years and has been slowed down with the argument that "BTL fuels cannot be produced cost-effectively and in larger quantities due to a lack of biomass. In practice, the expansion was stopped by the purchase of the plant manufacturer with the associated patents by a foreign group.

Peruvian President Garcia, who would have pushed through the expansion of the "Gynerium Sagittatum" fiber on plantations in Peru to demonstrate its feasibility on a large scale, has been out of office for years, and the whereabouts of the original brains behind the idea, namely American entrepreneur William New and his team in Peru, are also unclear.

How could it go on?

The recent developments of our climate clearly show that we need a real viable working solution if we want to save this planet for our children with a healthy climate. It needs a policy and press that relentlessly embraces our real technical and environmental options for climate salvation. We do not need an entrepreneur or an industrial initiative, but a worldwide alliance of all countries, which in the future builds up a clean C02-free oil industry (not based on fossil carbons), which builds up all needed carbons on plantations on a very large scale and so can bind very large amounts of C02 in our atmosphere by the way. So to speak additionally create an artificial green lung with an enormous capacity.

Theoretically, this can work, but it also needs the support of politics, the media, and the support of everyone who, as a worldwide movement, does not have to bow before the power of the oil industry.

The essential question remains:

Can politicians afford to move against the interests of the oil lobby?