



Bumps on the Road to Sustainability

GITA.global #unconference, 20. Aug. 2021



Agenda

My Journey to Sustainability

The Sustainability-Energy Dilemma

The "new energy sources"

Political Greenwashing

Private-Public Partnerships?

Summary

Food for Thought + Discussion



WE. FAILED. THIS. PLANET!



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<https://translate.google.com/translate?sl=de&tl=en&u=https://www.tagesschau.de/investigativ/wdr/ipcc-weltklimabericht-101.html>

We failed 1.5°C already. 2°C requires drastic changes by 2025. Changes with a scale that exceeds any current “plans”

Following I will give an overview on why the EU Green Deal is either cognitive dissonance or a bland lie. The same for Fit for 55 or other political and impact investor lip-services.

You want to make real change? We need real investments. And most (but not all) “Tech” by itself is more wishful thinking for a cheap solution than a real change maker. Especially if looked at isolated and not in a broader picture.

We. Failed. This. Planet!



KOLIBRI "Sustainability"
...agile everywhere .AERO

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	SUSTAINABLE DEVELOPMENT GOALS

and what about diversity, religious freedom, human rights, freedom of speech, everything I summarize like all the SDGs under

Respect

and

Tolerance

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The Sustainability Development Goals are not 17, where you can select and single out one for your greenwashing benefit. They are 17, just like Human Rights are not just one. Not just "Gender Equality" (SDG5) or "Climate Action" (SDG13). You either understand them as a common target, or you abuse them for greenwashing.

And being "an idea" the goals go beyond, complementing Human Rights "naturally" and boiling down to RESPECT, TOLERANCE and DOING THE RIGHT THING!

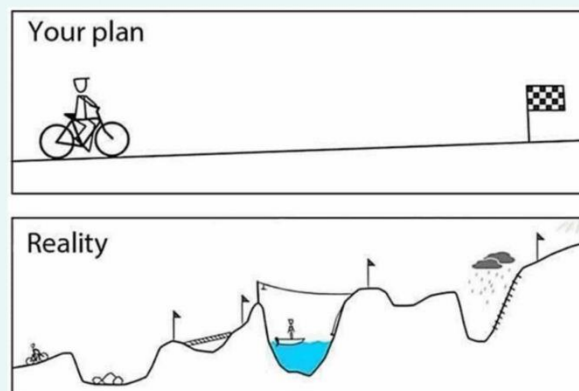
Working also as an expert in business angel networks, my advise to "impact founders" is to expand the business plan by a chapter "SDGs and Human Rights" and address each of the SDGs (plus i.e. free speech, religion and ethnicity from Human Rights) and the impact your company plans to make.

It is easy to pick. It is hard to make a real change!

And this is especially important for any "Impact Tech" investments to not fall for the greenwashing trap.



The Road to Sustainability



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The Road to Sustainability starts with the plan. It boils down to a plan that you show the investors. But in reality, it is full of bumps in the road! Some easy to see, some hidden drop holes.

Impact Investment often is the long road. While you focus on the first flag (behind the hole with the rocks), there's more developments needed to reach the goal. In Sustainability, there's a lot of investments necessary to **heal the world**.

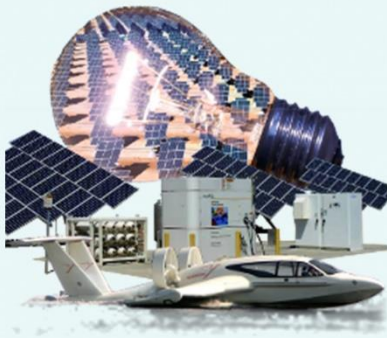
Now looking at "Tech", your goal is to make a change. Be aware of the drop holes in your own business plan. To be a true "impact investment" and to be calling yourself an impact investment beyond greenwashing, what is your (net) impact to our world? Beyond certificate trading and improving processes. And mainly: How much energy do you save (not add to the pile)?

The reality is in the left picture. Who wants to change? We all want. All those investors want. But who wants to real change? And my experience with impact investors is, they mostly do **not** want to change, but they want to claim to do "impact". Black Rock invests into crude oil and weapons industry. Yes, they do some green funds you can invest in, but by investing in Black Rock, don't you naturally support their other businesses too?

Many family offices and impact investors with a real impact focus question ESG and other "data models" to look at SDGs a greenwashing.



My Background



2008: Hydrogen Powered Wing-in-Ground vehicle with local, sustainable electrolysis



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Grown up in "Green Swabia" in Southern Germany, where all that "Green Party" started, I naturally thought about recycling and nuclear power and stuff like that.

Having worked all my professional life in aviation, I naturally recognized the cognitive dissonance in that industry. We **know** the negative impact of high altitude engine exhaust – which goes beyond contrails. But I also understood the need of travel and I am not fond of *aviation bashing*, being mostly very unfair but a nice big target. In reality, aviation does not account for that much, but it's a big, picturesque example.

Back in early 2008 at an aviation conference, I raised the idea to combine the German Aerospace Agency DLR's *SeaFalcon* Wing-in-Ground and replace its Diesel engine with a Mazda or BMW Hydrogen one. At that time looking beyond that "easy" idea, adding the source of hydrogen from solar-powered electrolysis, in 2007 realized by the Las Vegas Valley Water District. And winch launch to reduce the energy consumption for take-off. And and and. But while we negotiated with a major Green Fund and a Tropical Belt island nation interested in green tech, Lehmann hit, the project stalled and stalled permanently.

Developing an airline concept, my business partner and I looked into social responsibility and sustainability, though mainly "on the ground", as we understood hydrogen or electric flight being SciFi, but nothing of immediate impact. Only after we learned about SynFuel, understanding its real-world potential impact, we added that one.

Coming both from a military background, where you think long-term, where your "staff" makes a year-long committed career, we "naturally" looked at sustainability and social responsibility, we found them to be contributing to the profitability, so we excessively made use of those.

Only later, introducing our concept to someone at the European Investment Bank, we learned our ideas being in line with the U.N. Sustainability Development Goals, something we until then were blissfully ignorant about. It might be, why we understand you need the right mindset for impact investing. Both as founder, as investor.



What is ... Social Responsibility?

... in our aviation context



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So how did **we** interpret "Social Responsibility"?

A bit the "military way". Our people are first and foremost our responsibility.

Did you know a pilot pays the pilot training? And they usually pay off that bill for 10-15 years – it's one reason many pilots are expensive and why Ryanair uses "creative tricks" to pay "outsourced" pilots minimum.

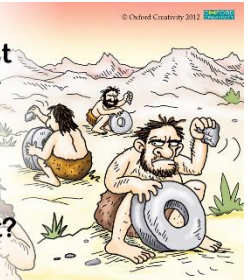
But looking at training as an investment for the company, with a 10-year career that gives them a safety is a win-win both the company and the pilot student. Like a pilot career in the military.

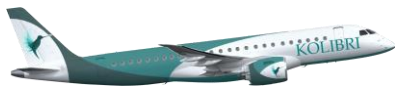
But sustainability in aviation is not just about the evident pilots and (usually underpaid) flight attendants, it starts with the cleaners, the support people. Not the managers in the cantina picture on the right, but the canteen staff on the left.

Aside for the founders: Did you think about cleaning and maintenance in your company? What about constant training? Do you plan to pay sustainable salaries? Sustainable for your employees and their families – or did you plan minimum wage? Did you plan "human resources"? Or "staff management" and development?

CFO: What would happen, if we invest into developing our people ... and they leave us?

CEO: What would happen, if we don't? And they stay??





Thinking Beyond: Uniforms



THINKING SUSTAINABLE

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Just an example. In an airline, we need uniforms. Did you know a complete set of uniforms in aviation is calculated with 150-200 US\$? We planned more, as we immediately wanted to focus on good quality. Then I met with Bernice Pan of Deploy in London and we discussed "sustainable uniforms". Finding our ideas being on the right track and sustainable uniforms being more expensive to get, but having a longer life cycle and such "paying off". Or as we call it: Contributing to the profitability.



Four Social Responsibility Pillars

WHO defined four pillars for the basic human basic needs:

1. Food
2. Shelter
3. Health
4. Transport

Providing these is our understanding of basic social responsibility (beyond U.N. SDGs)



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Many years ago, pre-SDGs, I learned about the WHO definition of the four pillars for basic human needs. Whereas Transport is "naturally" not about aviation, but about necessary local transport from home to work, doctors, shopping.



Our Climate Pledge

"We choose to go to the Moon in this decade and do the other things, not because they are easy, but because they are hard; because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win, and the others, too."

[John F. Kennedy, 1962]

"We choose to **fly Carbon-Neutral** in this decade and do the other things, not because they are easy, but because they are hard; because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win, and the others, too.

For there is no Plan[et] B".

[Jürgen Barthel, 2020]



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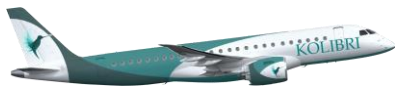
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Working on our own "impact" and ideas to make our new airline sustainable, we encountered quite some road blocks. More than just "bumps" on the journey to sustainability. But I made a pledge and I have no reason yet to say it's impossible, as all the existing airlines do.

I believe we can, we must make Kolibri the role model proving that an airline can fly carbon-neutral within ten years. And what is a challenge, if there's no hard work to achieve it? We cannot go as we do, we do need aviation. But we must make it green!

And yes, the pledge is about "carbon-neutral". Thinking about the contrails, there won't be "climate-neutral", but yes, we also think and have ideas about climate-friendly flying. Which includes thinking about the contrails.

But no, "Hydrogen" is just a big distraction allowing the airlines to invest little money into the research while they keep going without a change!



The Beginning of a Journey

BLUE SynFuel

Made using unsustainable resources
(i.e. "natural" gas, coal energy)

GREEN SynFuel

Made using sustainable energy and resources

BROWN SynFuel

Made using coal and/or crude-oil products

GRAY SynFuel

Made using mixed sustainable and unsustainable
resources (i.e. blended with fossil fuels)

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First "bump" on the way to green flying using SynFuel was our learning curve about "Green SynFuel", whereas "blue", "brown" and "gray" are a sham! Greenwashing! We can establish the technology to create enough Synfuel within about three years, including the certification of the engines, etc.

But to turn to **green** SynFuel is a big challenge, one that we will need to develop.



#sustainabilityenergydilemma



1 (one!) of our planned regional aircraft will burn about 6 million liters of kerosene (or synfuel) a year. At 15.4 kW/liter, we talk about 90-100 GWh/a (Gigawatts-hours/annually). At planned 200 aircraft in 10 years, we talk about 20 TWh/a (Terawattshours).
How many aircraft are flying in Europe? About 5,000... Mostly larger than ours. A rough guess: 600-700 TWh/a?

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SynFuel-pioneer SunFire published (and meanwhile reconfirmed) and energy need of 15.4 Kilowatt to create one liter SynFuel. Our small regional aircraft burns about 6 **million** liters a year minimum. So we talk about 100 GWh/a (Gigawatt-Hours annually) for a single aircraft. And we plan 200 in 10 years. Triggering the [Sustainability-Energy Dilemma](#).



Freight Ships (+ Cruise Liners)



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Then we talk about other industries, like container and other freight ships (or cruise liners),



Other Industries



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Steel mills, chemical industry and other large scale energy-consuming industries.



25 (some reports say 35) percent of the power consumption in the city of Frankfurt is consumed by data centers – more than Frankfurt Airport

That does not cover the electric power from business and personal IT systems incl. but not limited to mobile phones, laptops, company servers, etc., etc.

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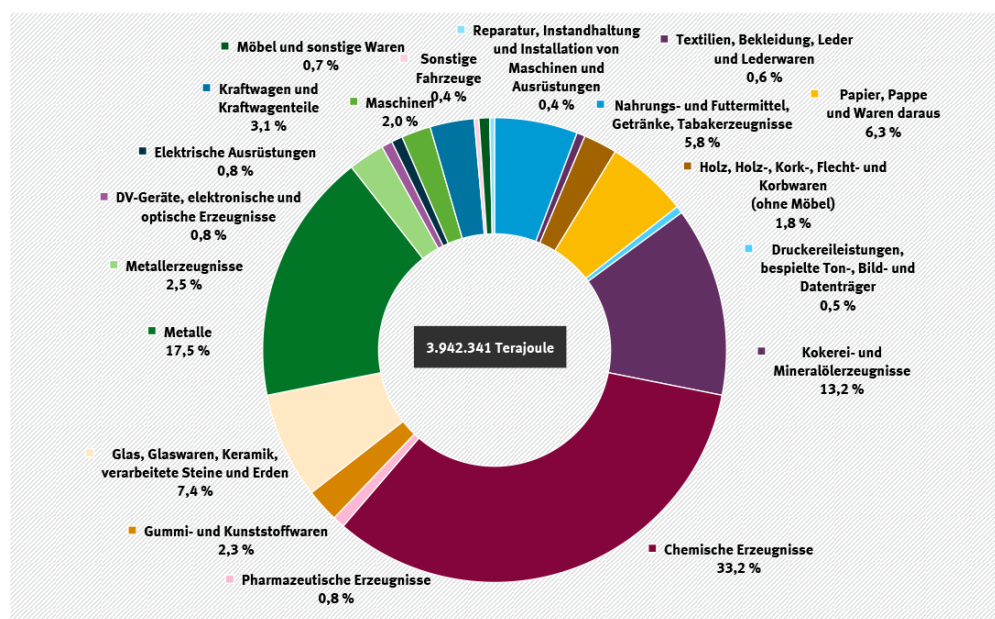
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Whereas data currently is mostly a black hole, there are reports that 25-35% of the total power consumption in the city of Frankfurt/Main are for commercial data centers. Again, this is a big Blackbox, as that only covers the commercial data centers, but not the servers inside companies, nor all the mobile technology, etc. – inquiring about those numbers, I am told by those “energy experts” that such information is statistically not available. Not even an educated guess?

One guesstimate assumed about 60% of the energy in Frankfurt/Main being energy related. But that’s just primary energy (power from the grid), but we also talk about aviation, consuming kerosene for the necessary power to propel airplanes from A to B. Even a subject matter expert for aviation I happen to not have the hard data on that. But yes, I can make some educated guesses. Back to the Sustainability-Energy Dilemma...

A complementary statistic from [German Bundesumweltamt on Energy Consumption](#) shows the way they interpret numbers, generalizing, obfuscating.

Anteile der Sektoren am Primärenergieverbrauch des verarbeitenden Gewerbes 2018



Quelle: Statistisches Bundesamt 2020, Umweltökonomische Gesamtrechnungen, Energiegesamtrechnung, Berichtszeitraum 2000-2018, Tabellenblatt 3.4, Wiesbaden



A Generational Challenge











BLUE SynFuel
Made using unsustainable resources
(i.e. "natural" gas, coal energy)

GREEN SynFuel
Made using sustainable energy and resources

BROWN SynFuel
Made using coal and/or crude-oil products

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Going Climate-Neutral and to reduce our global impact to 1.5°C is a generational challenge. It's nothing quick as many impact investors want to make us believe. Or startups. Or politicians. Or "the Media".

And in my humble opinion, it boils down to the need to conserve energy, reduce our energy consumption and use our energy more intelligent.

But the main issue is that we don't have the luxury any more to pick on energy source or technology carriers. We can't go battery **or** SynFuel **or** Hydrogen **or** solar **or** wind, or, or, or. We must make use of them all. In order to reduce our energy consumption, we will need "smart technologies", but not only. And they are a small puzzle piece on a big picture that we must finally start looking at.

We must also look into energy buffers, for which in my opinion SynFuel is a perfect technology as it can be generated from surplus energy, recreating energy from it when needed. We don't have enough pumped storage hydro power station, not enough waste-to-liquid or waste-to-energy facilities and we must also consider a "circular economy", recycling and not burning everything. Recently there are plans to open up landfills for resource-mining...?

And we must finally start to look at the whole picture and not just small puzzle pieces for greenwashing.

Another example being *Ember's climate report on the EU power sector* addresses only the current electric facilities, blending out the rising energy demand replacing fossils in secondary, fast-growing areas, such as e-mobility, data centers, etc. They focus solely on fossil-to-electric.



Batteries vs. Sustainability



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I happen to refer to this [2019 National Geographic article about Lithium Mining](#). And I hear claims that Lithium is being replaced. But this is just an example. The mining of raw earths and materials needed for batteries proof to be mined under life-threatening, unsustainable circumstances.

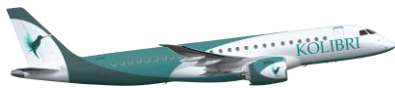
If we look at e-Mobility, the raw materials for batteries are sky-rocketing, China working hard to secure the resources for themselves. Now talk about real battery-driven e-Mobility taking off?

Aside which, do we then throw away the cars? In Europe cars are used in average 10-20 years. With a lifetime of many beyond 30 years, often being exported to "poor countries".

And we use highly inefficient batteries to store energy? With two kids, I keep using rechargeables, but every few months, I throw away a small bag full of dead batteries that I had to replace. My notebook battery usually survives 1-2 years before it needs replacement. Before they integrated batteries unchangeable (unsustainable) into smart phones for planned obsolescence, there was an industry replacing the batteries on "old" smartphones.

And that shall be the future of transportation? And while speed charging is nice, my phone get's nice warm every time I "Turbo Charge" it. And we all remember the Boeing 787 aircraft batteries catching fire. Or the Samsung phone disaster where their batteries caught fire.

Put all your bet on one horse. I can assure you, the gains if that horse goes in first won't be high. And it might not be the best investment.

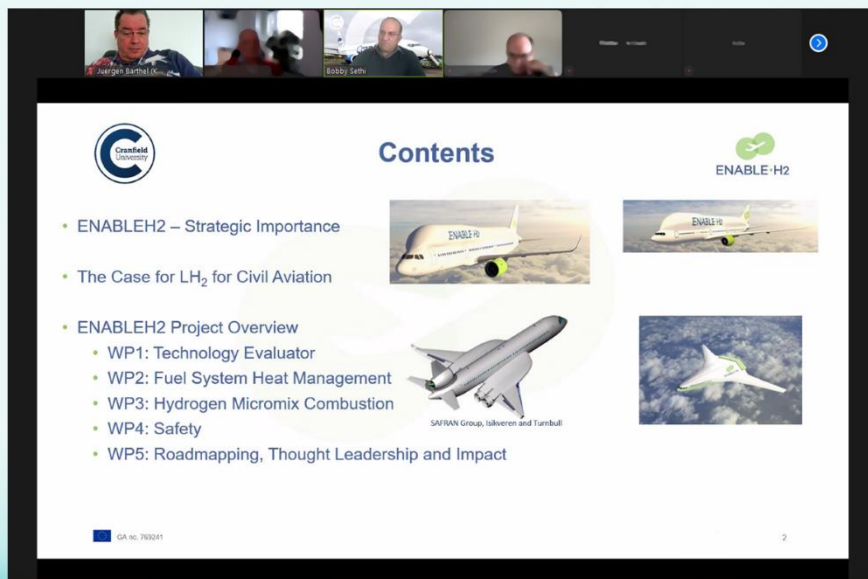


Hydrogen Reality Check

You really want to sit below -250°C liquid hydrogen?

Aside it's not as clean as it looks.

NO_x being a problem and even H₂O contrails at high altitudes.



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On Hydrogen, there is a lot of buzz lately. But aside the energy needed for ultra-cooling it and/or the pressure tank technology required, it's not as clean as it looks. The contrails are actually questioned to be actually more climate-unfriendly than SynFuel, which experts in the field call a "bridge technology".

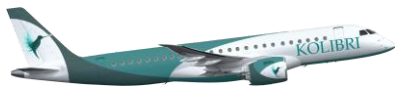
Raising the question, why SynFuel couldn't become the permanent solution.

Don't disqualify hydrogen though, many industries will have good use cases for it. But as batteries, they are just one technology and a very inefficient one to be used for energy storage/buffer. But you also need hydrogen as a basis for SynFuel.

Another natural gas with extreme negative reputation is Methane. But speaking to a friend having a "milk farm" ("bio" for sure), we agreed, there will likely be technologies to catch the Methane from the cattle poo. Whereas Green Activists frequently focus on the steaks and beef as a negative, milk still is one of the most valuable products from cattle farming!

Methane (CH₄) can also become a source for the creation of SynFuels and such help to improve the energy cycle. Aside the idea I came by in a family office conference to create diamonds from the C to create 1x Carbon and 2x H₂ from the hostile Methane.

As I keep mentioning. We need ideas, which there are aplenty. And we need investments to turn these ideas into action.



Some Headline News

The Questionable Promise of Green Hydrogen

Steel Mill claims lack of Green Hydrogen for decades

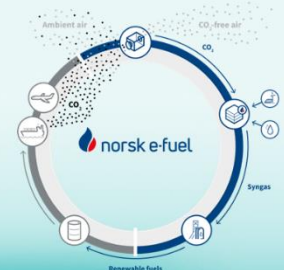


Development of German Offshore Windparks at Standstill

German Politics killed German windpark know-how, no new offshore windparks for years to come

Norsk e-Fuel realizes European lighthouse project

Lead by German Sunfire, the project established in Oslo, Norway – non-EU and no EU-support



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Just the week before this presentation, there were two headlines qualifying my claims about distractions and fog screens keeping us from investing not just into the climate change, but into the energy change and it being directly related.

First German Georgsmarienhütte, one of the large steel makers complained about the demand to introduce hydrogen for clean steel production but the lack of availability or plans to generate the necessary hydrogen for years to come: <https://www.tagesschau.de/wirtschaft/technologie/gruener-wasserstoff-georgsmarienhuette-stahl-101.html>

The other news disqualified the claims of the German politicians on Wind and Solar energy development for the "Energiewende" (energy transformation). Whereas German wind park technology was crippled and strangled to the point that experts emigrated, the industry mostly shut down in Germany and the only remaining sizeable project being development for a wind-park in the U.K. (post-Brexit). Subject Matter Experts claim it will take 4-6 years to recreate what was there before the politicians left scorched earth behind: <https://www.tagesschau.de/wirtschaft/offshore-windenergie-ausbau-101.html>

Another example from my focus area SynFuel is a bit older, but. German Sunfire I mentioned as a pioneer in SynFuel. Learning about them, I approached them about SynKerosene in 2019. Quickly their graphs were updated reflecting on that. After a pilot in Hamburg, in 2020 they started a joint venture to develop the first commercial SynFuel facility. And from what I heard, the selection of Oslo, Norway was based on three arguments.

First, the Hamburg pilot encountered very limited industry support, namely from Lufthansa. That was pre-pandemic by the way. But my sources considered their support even "hostile". – Second, approaching EU for funding, their focus was on electric and not hydrogen and they were not interested to support such a venture. – And third, the Norwegians were and are very interested in SynFuel for aviation, and as an energy buffer, providing surplus energy to power the SynFuel-facility: <https://www.sunfire.de/en/news/detail/norsk-e-fuel-is-planning-europes-first-commercial-plant-for-hydrogen-based-renewable-aviation-fuel-in-norway>



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SynFuels

1 liter of synfuel requires
15.4 kWh of energy.

Reminder. For aviation, we
talk about Terawatts energy
to replace fossil fuel.

Cleaner than it seems, not
the bridge technology for
hydrogen but a solution!

BLUE SynFuel

Made using unsustainable resources
(i.e. "natural" gas, coal energy)

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Made using sustainable energy and resources

BROWN SynFuel

Made using coal and/or crude-oil products

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Total net electricity generation in the EU was 2 806 Terawatt hours (TWh) in 2018. That was not green energy, that was the total energy created, what I call the grid energy.

So with at least 600-700 TWh/a to create SynFuel for aviation alone (as mentioned before), just for flight we would need 20-25% of the total energy consumption? Likely more? And then we talk about steel mills and container ships and other energy consuming industries?



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Nuclear Power

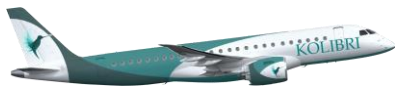


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Following Fukushima, Germany shuts down atomic power next year. Replacing it with what? Solar? Wind? Or more likely: Imported nuclear and fossil-based energy? Lip services. And ... Is "nuclear power" bad or would we likely be better off investing into fusion or solutions for making use of the "nuclear waste"? A "circular atomic economy"?



Fossils

4.6 trillion liters of crude oil per year

At 317kg/barrel ~ 9.3 billion tons of CO₂

Millions of TWh/a if we want to replace

At 9.3 tons of CO₂, where do the other 30 tons come from?

Europe at 19.1 million barrels about 6 billion kg CO₂

Can temperature rise be kept below 1.5°C?

1.1 This is the increase in temperature since pre-industrial times, in degrees Celsius

2,400 And this is how much CO₂ in billions of tonnes that humans have emitted to date

500 Emitting these extra billions would leave only a 50-50 chance of staying under 1.5°C

40 This is roughly the amount of CO₂ that humanity emits every year, again in billions of tonnes

Source: IPCC

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Aside fossils (coal, "natural gas") used to create grid energy, we use fossils for engines to propel us from A to B, for plastics, for tons of other products. A real Energy transformation must address this energy source or we are simply greenwashing reality. Which goes beyond mere cognitive dissonance. As I cannot imagine our political elite to be so shortsighted and stupid not to understand that replacing coal, nuclear energy and fossils don't have to have a replacement. So they **intentionally** limit their scope and blind-side developments to keep the status quo. And provide some "research funding" and minor investments into small scale projects to distract from their incompetence...?

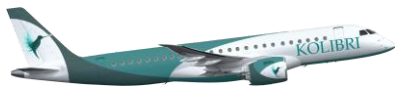
Crude oil is used at about 75-80 million barrel per day or 4.6 trillion liters/year. If we use the energy need for Synfuel as a (very rough or "crude") indicator of energy we need to replace crude oil, we talk about green energy at a level of about 70 **million** Terawatt-hours/year (TWh/a).

If we assume (source Jim Bliss on numero57) 317kg CO₂ per barrel (aside all the other climate gases), we talk about 9.3 billion tons CO₂.

And where are the other 30 billion of CO₂ coming from?

19.1 million barrels (~159 liters) per day in Europe = about 3 billion liters. At 317kg/barrel ~ 6 billion kg CO₂. And now; how much CO₂ do we need to reduce? And take off the blinders, this is a generation challenge!





#stopgreenwashing

Take of the Blinders, stop lipservices and
think BIGGER!

- IT vs. Energy
- Definition of Impact Investing
 - Quantifiable Net Impact
 - No Carbon-Offsetting
- Placebo Investing
- The End of the Combustion Engine? All “e-”?



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This is a big challenge, that we need billions and trillions of investments into.

We need to think outside our petty boxes! If you develop “IT” (computer programs), what impact does that do to the main challenge, the sustainability-energy dilemma. Are you helping to conserve energy, to improve energy use? Or are you just adding to the burden?

We must get away from “ESG” as a greenwashing detergent and towards quantifiable net impact, without carbon-offsetting to greenwash your own adding to the CO₂ pile. And other Placebo investments like Black Rock investing into war technology and crude oil but claiming “impact” by having some minor impact funds.

As an impact investor, what is the impact your overall investments have? Don’t think small, don’t think in quick returns, what is your long-term impact?

Example: We cannot change the aviation world in Kolibri, our initial impact will be small. But our targets are bold and quantifiable! 200 airplanes in 10 years flying on SynFuel, with investments to grow into 100% green synfuel. **That is impact.** Stop thinking small. Think bigger!

Given the Hydrogen Aircraft example, being used as investment into an unlikely solutions to avoid real action. I don’t say, there may be a business case for hydrogen aircraft, but not anytime soon and just delaying the necessary change in *my* industry.

Stop claiming E-Mobility and the end of the combustion engine (Volkswagen, Mercedes, ...)! Cars have a life cycle of 10-20 years. What about those 90% “old cars”? And don’t look at one market only, look on a global use scale. This is small scale investment into big change. And what happens, if those secondary car markets can’t invest into mighty electric, understanding the sustainability-energy dilemma? Maybe there will be a future for cars powered by SynFuel? Or Hydrogen? Or other technologies?

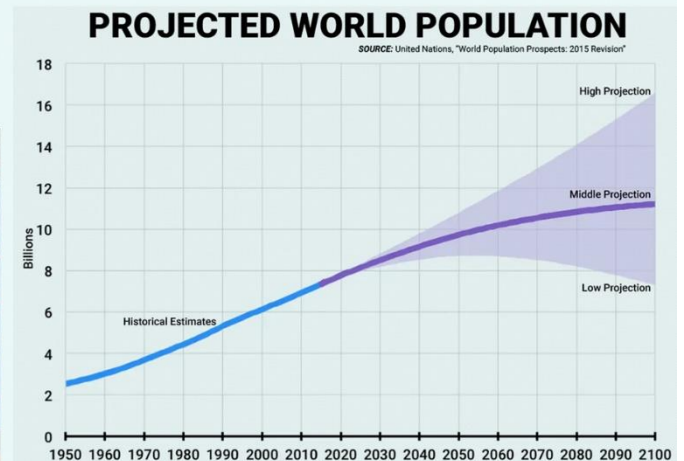
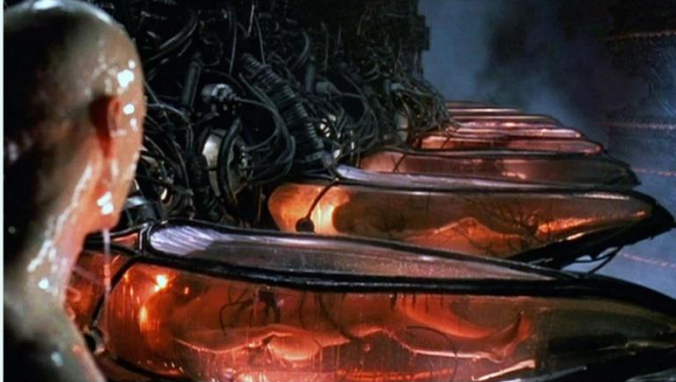
In SciFi in the 80s I read about “The Roads must Roll”, with the idea of mass transport using moving walkways. Or electric catapult-powered hyperbolic flight. Or the elevator to the stars. Or Hyperloop. Those ideas are not new.

But stop finding excuses. Stop the cognitive dissonance. If you’re really “impact”, then quantify it.





But ...



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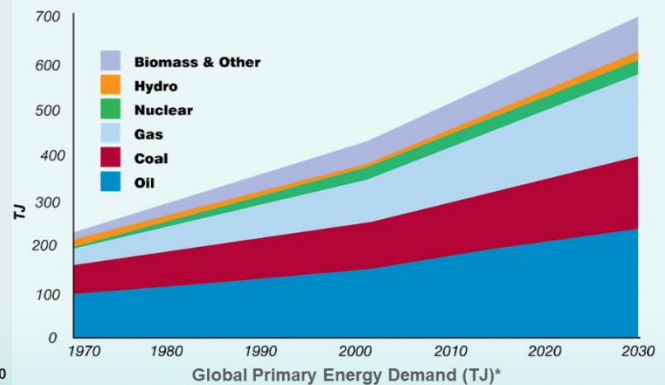
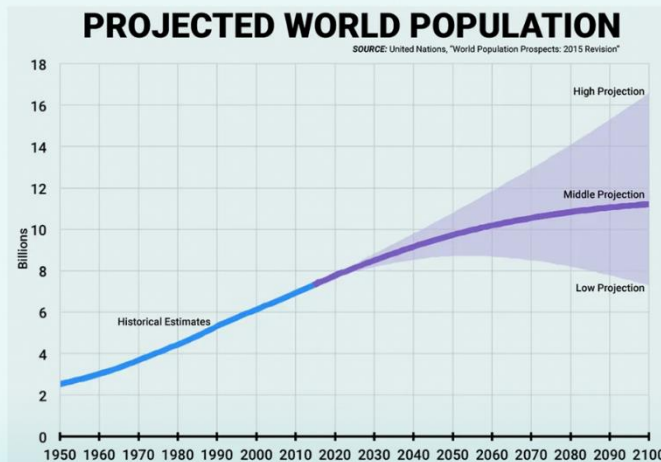
All that said: Power is universal. We cannot go "Zero Power" or we are dead!

As we learned from the *Matrix* movies, every body creates energy. Actually I read lately, an average person produces as much heat than an old 80W light bulb. But I can say from own experience that we use less heating than when I was a single and had less "tech" at home as our computers and bodies provide for quite some warming.

Traveling from i.e. Hamburg to Rome requires energy. Food, warm clothing, hotel rooms, fire and light, you name it. The heat of single transport (hiking) is larger than mass transport. Then thinking beyond climate, thinking sustainable, we have all those roads and railtracks sealing the ground. Whereas an airplane needs an airport with very limited ground sealing... And the energy consumption per person on flight is better than on bus. All that besides maintenance and time consumption...



Energy Demand and Sources



* Anton Pehlivanov, The University of Edinburgh

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Is it only me? No. Can't be.

With a growing world population and increasing wealth in regions like China and India, we are increasing the power need. Logical consequence: The increasing power consumption in those regions.

And it's a common graph, showing that we have a rising, not a falling energy need. But in order to decarbonize and limit the global warming, we must **lower energy** demand. As else, we replace one unsustainable energy type that heats the planet with another one.

If I look at the growing demand of coal and oil and "natural gas", it is pure greenwashing if our politicians talk about an energy transition. And a large part of this is attributed to "tech". To data centers, growing IT consumption, etc.



Example: The Green(wash) Deal

The Sustainability Bank?

Fit for 55 ⇒ Delaying tactics



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And another example for the lip-services of our leaders.

The European Investment Bank recently claims to be the European Sustainability Bank. But that is pure greenwashing!

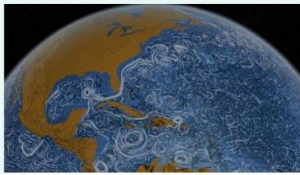
When asked at an impact conference, EIBs VP Sustainability could not provide any hard facts or lessons learned from their “more than 10 years of impact investing”. Claiming that they need to look into it.

Reading <https://www.eib.org/en/about/priorities/climate-action/index.htm> it sounds very much like a buzzword bingo.

And Plan A recently shared also what we must know about the Fit for 55 package, being just another example for a fog screen by our political leaders to distract from their failure to address this on a global scale. With real impact!



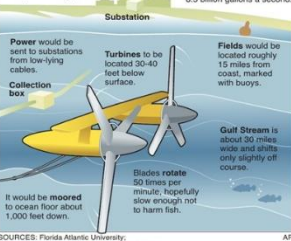
The Butterfly Effect



Harnessing the Gulf Stream's power

Researchers say the Gulf Stream's current has the potential to produce as much energy as perhaps 10 nuclear plants and supply one-third of Florida's electricity.

Researchers' concept for producing power



SOURCES: Florida Atlantic University; National Oceanic and Atmospheric Administration



THE BUTTERFLY EFFECT

It has been said that something as small as the flutter of a butterfly's wing can ultimately cause a typhoon halfway around the world.

-Chaos Theory



THE WALL STREET JOURNAL.

Egypt and Ethiopia Clash Over Nile River Dam as Water Scarcity Looms World-Wide

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And while they, we invest into the energy transition and hopefully into ideas how to resolve the sustainability-energy dilemma, while we invest best to our ideas, I hope our research community also looks into the secondary effects.

Remember the Butterfly Effect from the Chaos Theory!

Whereas scientists warn that the gulf stream "engine" will likely stop before the end of the century, smart other scientists and investors actually plan to harvest the gulf-stream power using superscale water turbines.

That's just another example comparable to what happened to the [Colorado River](#). Which rarely reaches the Colorado River Delta between the Gulf of California and Sonora in Mexico.

The very same discussion than recently on the *mighty* Nile and the Nile River Dam built by Ethiopia. How will the Nile look in the future.

And if we add Offshore-Windparks, extracting Terawatts of energy, how will that impact on winds and weather in Europe and into Russia? Building solar parks, how will that impact the soil temperature and the flora and fauna in the region?

I am not saying that we should stop all those developments, but we must think beyond. We must stop thinking inside our convenient, cozy box and think holistic. As we did in Kolibri, not thinking only about establishing another (no matter how different and disruptive) airline, but thinking about our impact.

Can you answer for your startup or investment the impact you're making? And is that positive impact? Really?



Political Lies

- Commitments to 2035, 2045, 2050 ...
- The same story ...



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Given my afore mentioned concerns and especially the Sustainability-Energy Dilemma, who believes that we truly achieve any of their mighty goals in time? There are a lot of commitments that remind me of the German joke about safe pension plans "Die Rente ist sicher". It's not the first time, politicians make mighty commitments for the next generation and beyond the time they consider their own power lasts.

For the ones not knowing the German story, there's the American 1997 block-buster called *Wag the Dog*. Where they used a non-existing crisis to distract from their political failures.

Fun fact: The crisis country was Albania, the very same country I call my new home. So all that ain't new either.

What really concerns me, when in the pre-election, Green Chancellor candidate Annalena Baerbock asked about the necessity to develop energy buffers that we have it and can store electricity in the grid...? ([Report on Heise.de](#)) If you listened in your physics classes, you know that energy cannot be stored, only used. To store, we have some pumped storage hydro power station, mostly in the Alps. That's stuff I expect a green political leader to "know". Am I expecting too much?

But that is the **green** chancellor candidate. It's like Merkel, a physicist with a surprising ignorance about physical basics and natural laws.





Example: FFE.de

*“With Dynamis, the energy need for all aircraft taking off and landing in Germany have been taken into account. In eXtremOS only the national aviation has been considered. The need for green fuels for Europe because of aviation such exceeds the defined [fuel] amounts defined in XOS. But for XOS those values were of secondary relevance, as **we assumed an import of these fuels** and the focus on the setup of the energy system has been inside Europe.” [Dr. Christoph Pellingner]*

Manager Strategic Project Development



FFE: Forschungsstelle für
Energiewirtschaft e.V.

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As I mentioned before, the Research Association of the German Energy Industry FfE responded to the question how the energy transition and their numbers (don't) compute with aviation demand, by referring to an assumed import of these fuels. You. Got. To. Be. Kidding. Me?

So if our research specialists blind-side major industries like aviation, no wonder our politicians believe that their dreams of an energy transition will work. Or they can hide behind those numbers, claiming later their unfortunate oversight of such small print.

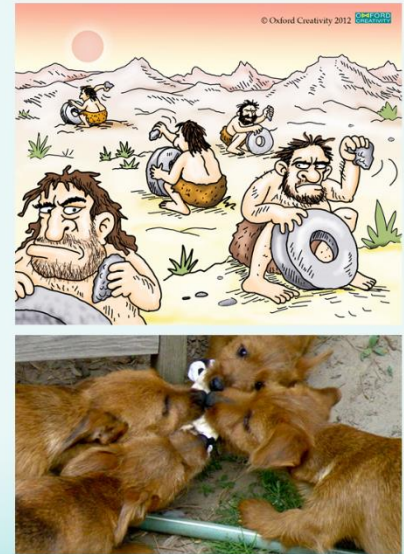
But reality is, that if we want to make a change, the challenge is a lot larger than ignorant politicians or naïve media wants to make us believe!



Impact Investors

- Cognitive Dissonance
 - Scale of Projects
 - Digitalization adds Energy Demand
 - Net Impact to the World
 - Use Public Funding!
- GreenTech Alliance?
- Global Impact Tech Alliance?
- Millionaires for Humanity...

Like Fund of Funds an Impact of Impacts?



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Now speaking about disinformation from our politicians, research and the media, we also must have a look at the Impact Investors. Often self-proclaimed, like the mentioned examples of the European Investment Bank or Black Rock.

At first is the question, on what is Impact Investment, where I found a trilogy of articles by [Scott Greenhalgh](#) very insightful: *#impactinvestment = "investments made into companies, organisations and funds with the intention to generate positive, *measurable* social and environmental impact alongside a financial return"*.

Questions I raised with self-proclaimed impact investors were the scale of their projects and the percentage they invest intentionally into impact. If their focus is on real impact or maximized profits and how they quantify it. We found ESG not the first time to be used as a means to greenwash their investments ([example](#)).

Working with business angels, I was asked for my opinion about start-ups, gaining some insights into some of the recent "tech" and AI startups. People knowing me is that I quote one of the former AI-parents of Facebook's AI-development (Facebook M). Claiming that most "AI" is "IA", intelligent algorithms. A buzzword with little meaning. A bit like "impact investor"?

In most cases of "tech" and IT investments, but also and especially on the fancy block-chain and crypto currencies the founders simply ignore the power consumption of their "solutions". I had the opportunity recently to discuss with one of the bigger blockchain startups about their energy strategy, triggering quite some surprise and embarrassment...

Other questions are about the **net impact** to the world. Which can be long-term, but what is the impact vision? Keep in mind, we want to transform an airline to climate-friendly, that ain't a quickie.

So then I talk with Green**Tech** Alliance and the Global Impact **Tech** Alliance. But what if most GreenTech and Impact Tech is lip-services adding more energy demand instead of reducing it? Most, not all. There are some startups that do make a net impact. But very often, impact is a buzzword without substance. And many if not most "Impact Investors" have not understood the meaning of impact. "Impact investment ain't philanthropy. Do good and make money." But for real impact investors, the impact is naturally vital part of their **return**-on-investment.

Which brings me to Millionaires for Humanity, claiming they want to pay fair local taxes. Not specifying really what would be fair. Nor open to ideas investing all those taxes they don't yet pay into philanthropic or riskier impact investments to do the right thing.

Thinking about TONIC, GTA, GITA and all those others, why are they all pulling from different ends? Why is there no "Impact of Impacts" association? And while Plan A asks to sign a petition against greenwashing, I happen to question if they are not falling to the trap of greenwashing themselves? And why are there so many with the same focus but working blissfully ignorant of each other?

Summarizing



Sustainability: Beyond Climate


- Social Responsibility
 - No-One is Left Behind
 - Constant Training
 - Sustainable Salaries
 - Residence
 - Food
 - Health
 - Necessary Transport
- Paying Local Taxes
- Beyond SDGs (Human Rights)
- Circular Economy



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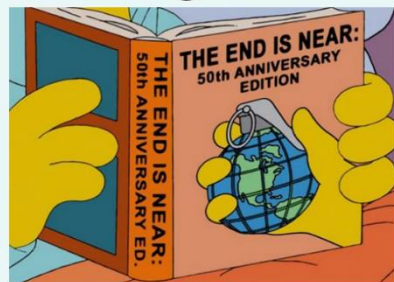
And talking about Sustainability, it is not about climate only. Or gender. It's about doing the right thing and looking to improve the "health" of the world we live in.


How can we expect to change entire industries? Any UNHWI in the arena, please select an industry you want to change and start changing. Any pension funds or institutional investors who want to become "sustainable" beyond greenwashing, select the industry and partner you want to work with to turn it carbon neutral.




Going Climate-Neutral ... Together

- Join Forces
- Not this **or** that, but this **and** that
- Large Scale
- Solve the Energy Dilemma
- Circular Economy









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And why don't I find any impact investors that are ready to minimize their investment risk by working with one of those public programs? If you want big impact, you have to play it big.



The Man in the Mirror

- Woodstock
- Anti-Nuclear Movement
- Greta: Fridays for Future
- GITA
- ...



Michael Jackson - Man In The Mirror (Official Video) - YouTube

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Then it all starts with the (wo)Man in the Mirror. It's nothing new. *Imagine all the people ...*



Food for Thought ...



“For those who agree or disagree, it is the exchange of ideas that broadens all of our knowledge”

[Richard Eastman]

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This is all my humble opinion and I do make my own mistakes, work with incomplete information or misinterpret other. So I keep it with the old proverb. ***If you disliked something in my presentation, please tell me. If you liked it, tell your friends.*** And as I keep it on my personal blog: [Food for Thought](#) ... Comments Welcome! Or more contemporary, share it on your networks!

And I appreciate especially comments or suggestions for my article about [The Sustainability-Energy Dilemma](#)! Find me on [LinkedIn](#) or [WhatsApp](#).

Thank you! Jürgen Barthel