Interview **16 May 2020**

“If we act too late, nature will punish us!”

Professor Wolfgang Feist on what the Corona crisis can teach us about climate protection

The founder of the Passive House Institute, Professor Wolfgang Feist, explains what strategies we can transfer from combatting the Corona virus epidemic to our fight against climate change. © Passive House Institute

Can we still solve the climate crisis?

Yes, if we act now and act with consequence! We have the unique opportunity to not to go back to "business as usual", but to choose the progressive, responsible path for a better future. This path can lead to more prosperity on a more sustainable basis.

What does the corona crisis teach us about acting too late?

As with the climate crisis, the virus epidemic is a growth process with some aspects being temporally delayed. In nature, we often deal with these types of processes and, interestingly, you can calculate them reasonably well. Since the corona epidemic is affecting all of our lives at the moment, let me explain this from a scientific perspective:

Phase 1: The new development is barely noticeable in the beginning. In the case of the epidemic, there may be some infections; at the beginning of the climate crisis, there were some floods and increased temperatures during summer. The public notices a slight increase and more cases.

Phase 2: After a certain amount of time, two infections become four, then eight, sixteen, and so on. That might not leave a lasting impression on the public yet, but the scientists involved realise that there is an exponential growth rate that will result in 1024 cases after ten doubling times, that will lead to an extremely high amount of cases after 20 doubling times. In the case of the climate, this is the point when the experts (epidemic: Robert-Koch-Institute; climate crisis: meteorologists) will start to warn the public while politicians and the media downplay these warnings as scaremongering.

Phase 3: When a certain threshold of cases is surpassed, the ones that are affected first will realise the problem (epidemic: retirement homes and hospitals; climate crisis: island nations, the Sahel, indigenous peoples.) Now the public, too, realises that there is a

problem and starts to discuss that "we now have to help the affected". In an epidemic, we start practising social distancing, and set up more beds in hospitals; for those affected by the climate crisis, we relocate people living on islands, make economic aid available for indigenous peoples or plant trees in the Sahel. Unfortunately, it does not change the original dynamic but merely treats the symptoms. The causes stay the same, and the exponential growth rate continues.

Phase 4: True to the laws of nature, more cases follow, often more extreme than previously. While the epidemic breaks out and shuts down the Lombardy, Strasbourg and New York City, global warming leads to glacial outbreak, tropical summers in Europe and catastrophic storms. A lot of people now truly realise the problem and are devastated by the numbers that seem to explode.

If there were 200 victims yesterday, there will be 400 in three days, 800 in six days, then 1600 and so on. When this realisation hits, people, of course, want these “terrible occurrences" to stop immediately. This most often results in a sort of panic. In an epidemic, administrations react by shutting down streets and public life or distributing disinfectants by airplane. In the case of the climate crisis, they will later instigate driving bans, limit energy consumption or implement restrictions in building codes.

Phase 5: The problem with these restrictions is that, because of the time delay between cause and effect, these measures (although they might be sensible) come too late. Those infected with the virus contracted it days earlier, the numbers in the epidemic keep rising; the CO_2, emissions that increase the earth's temperature, were emitted decades earlier, and temperatures will continue to rise for the upcoming decades.

This does not change the fact that without these measures, the developments might become even more catastrophic. Yet some of the less informed still do not want to acknowledge this.

Phase 6: Suddenly, large sections of the public become angry. Some are in direct contact with victims or feel that others are ruining their ski parties or cruise ship voyages. This can lead to social unrest and even civil war, some of which has already been seen during the Corona crisis. This is only exacerbated by those who want to increase infighting in society anyway. These people now escalate the situation, call for protests or find scapegoats and invent conspiracy theories.

Reoccurring heavy rain showers are one of the effects of climate change. “As with the climate crisis, the virus epidemic is a growth process with temporally delayed parts,” according to Professor Feist. © Pixabay

Phase 7: Whether the situation can be managed depends on the scope of the threat and the influence of those that are still thinking and acting rationally. **This is where both developments start to differ:**

In the case of COVID-19, the worst possible case is an epidemic that holds back the economy for months while millions of people continue to be infected and hundreds of

thousands may die. Being aware of what this would mean, I do not want to make a judgement here, although everybody that knows me personally should be aware that I could never approve of this based on my moral compass. However, from a cold, scientific perspective, the economy will have recovered approximately one year after having found a vaccine - society can “continue”.

With the climate crisis, things are different: The percentage of those directly affected is far higher, and there will never be a "silver bullet" like a vaccine. Even with a sizeable response, things will continue to worsen for the coming decades. The economy cannot recover under such circumstances. This is the real danger of climate change.

After just having had a discussion that triggered the darkest and deepest regions of our brain, we now have to go back to using our cerebral cortex, we haven’t done that yet regarding climate change; we are only in phase 2. However, if we keep following the same path, arrival at phase 3 is already set in stone according to natural law.

If we keep up our “business as usual” approach for ten more years, there is no way of avoiding phase 3. Being in phase 2 (I know, I'm repeating myself here) we have the chance to react and tackle the root of the problem: We have to reduce CO_2, methane and other problematic emissions wherever that reduction is not too hard of a pill to swallow. Now we could argue about what of the following is a “too hard pill to swallow”:

a) Increasing wind energy

b) Putting photovoltaic systems on almost every roof

c) Getting rid of coal power plants

d) Having a general speed limit on the German Autobahn

e) Switching to electric cars that can "only" travel 300 kilometres

f) Significantly reducing our meat consumption

g) Stop using air travel for our holidays

h) Wearing warm clothes and reducing our indoor temperatures to 18 degrees in winter

i) Using less concrete and brick construction; more wood and straw

j) Less replastering and better insulation

k) Only using triple glazed windows instead of double glazed

l) Having significantly better building standards

m) Using heat pumps and district heating, instead of oil and gas

This list could easily be extended upon. What is clear is that the situation has escalated to the point that we cannot afford to disregard any of the measures listed. If we ignore these now, we will need more drastic measures in five years’ time. These might look something like this:

n) Complete ban of vehicles with an internal combustion engine

o) Bans for oil heaters. Gas heating will follow soon after

p) Bans of specific materials in construction

q) Shutting down electricity completely in certain places at certain times of day

r) A complete ban on factory farming

s) The total shut down of air travel except for essential flights

t) Areas that could be used for renewable energy production could be expropriated by the state

u) This list of worst-case scenarios can easily be expanded upon...

I am afraid that these measures already hit a point that is barely tolerable for our modern society. The way I see it, this is not a future I'd like to live in.

That is exactly the reason why the Passive House Institute has been working for decades to make solutions that can be implemented easily available to the public. The Passive House Standard itself is one of them: Every newly built Passive House building is guaranteed to be a sustainable solution, every EnerPHIT retrofit solves the climate crisis for that particular building - and everybody can do it. Solutions like these can curb emissions (the heating sector makes up 30% of our energy consumption) to one-fifth of its former total. Just as important to note is that Passive House new builds and retrofits provide a cost-efficient solution to ensure the coverage of the energy demand by renewables and the subsequent reduction to "Nearly Zero".

It is fundamental to expand our renewable energy sources. According to Feist, “All these measures do not aim at taking anything away from us, but rather they will increase our quality of life.” © Pixabay

We also don't focus enough on the fact that Passive House and EnerPHit can stimulate the economy. These sustainable measures are economic investments, after all, and they create jobs, a lot of jobs actually. Contrary to any actions that will be forced upon us if we act too late (travel bans, etc.), these energy efficiency measures actually impact the economy positively. They lead to a change that supports sustainability and brings about a societal shift towards consideration and solidarity.

How much time do we have left?

If we act now, we have about 50 years to reach a sustainable future without too much hassle. This future includes energy-efficient buildings with an overwhelmingly high percentage of renewable energy, as well as a sustainable transport sector. **Yet, if we don't act now, all we lose is valuable time**.

In 20 years’ time, we’ll only have 10 more years left to prevent the worst-case scenario. We’ll have an extreme crisis on our hands. Buildings will not be heated or cooled, there will be no warm water because we simply are not allowed to generate that much energy through fossil fuels. **The corona crisis has taught us: When you are not prepared and react too late, nature will punish you.**

Unlike with the corona crisis, the climate emergency will not only affect individual nations, suffering due to an unprepared health care system or delayed, ineffective action. The climate crisis will lead to consequences we cannot undo and the whole civilization, as we know it today, will cease to exist.

What do we have to do right now?

In the building sector, we must improve energy efficiency. We must construct new builds according to sustainable standards on a large scale and retrofit almost all existing buildings in the next 50 years.

Through large scale district measurements, the Passive House standard has proven that buildings can indeed get by using very little energy, while the indoor comfort is improved.

Following this path, we can ensure an energy supply built on sustainable ressources which is also affordable. Using regenerative, renewable building materials is another critical approach.

At the same time, we have to drastically reduce emissions in the transport and food sectors. Here, too, it is a combination of efficiency and sustainability measures that lead to a sustainable solution: Electric cars are about three times more efficient than those with combustion engines. On top of that, electric cars can be operated using wind or solar electricity if we increase our capacities for this (hence, photovoltaic systems on almost every roof).

When it comes to food, it is a combination of creating less food waste, a healthier diet (fewer animal products), ecological farming (less artificial fertilisers; more biodiversity) and renewable resources (more forests; less fodder production) plus renewable energy (farmland can be used for photovoltaic production if the cells are installed two metres above ground; wind farms do not hurt agriculture but rather they can actually create an additional source of income).

All these measures do not aim at taking anything away from us, but rather they will increase our quality of life:

For example, electric vehicles are far quieter and reduce air pollution and consequently, the effect they have on our lungs and respiratory tracts. These approaches will also enable us to ensure the survival of the human race on planet earth.

There is a chance in every crisis. What are your hopes for our immediate future?

We should learn to talk to each other and we need to pay more attention to science. Ethics should be a part of every school curriculum, as it increases our capacity to understand instead of mindlessly shouting platitudes at each other.

We should not spend money to rebuild structures that are unsustainable and counter-productive. Instead, we should use our money to support sustainable and future proof solutions. We should see money as a tool to reach our goals instead of, as often discussed in scientific economics, as a goal in itself.

To cite Carl Sagan, we should "deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we've ever known." As you can see, my wish list is long, and still incomplete.

END

The interview was held by Katrin Krämer, Passive House Institute.

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