

Sustainable energy: Be careful what you wish for!

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The technologies to obtain virtually "free" energy from sun and wind are already available, and storage technology is also developing rapidly. Green energy for all our devices. By moving away from heavily polluting "fossil fuels" and nuclear energy (because nuclear waste is certainly also deadly polluting!), we can meet our indirect energy needs, without further contributing to climate change and harmful emissions. Wonderful, isn't it?

Green energy is just one of the two types of energy humanity needs: energy for our man-made world, including cities, road networks, industries and technological systems (energy for the systems that drive out the ecology, premise 1). However, a second type of energy is needed to meet our biological needs: energy from plant and/or animal raw materials (from ecology, premise 2). Green energy feeds the main "competitor" of ecology, our organismic source of energy. With the expansion of energy for unbridled technology, the imbalance between the man-made world and ecology will increase. Renewable energy is quickly running out at the expense of the ecological energy sources needed for life. Unless we control ourselves now, the imbalance between man-made (inorganic) systems and life (organic systems) will easily increase.

This dilemma - polluting energy must be replaced, but "free" green energy will further increase the imbalance - requires awareness and drastic behavioural change. Technological development has taken on a life of its own and we are increasingly losing social control over it. Free energy for ever larger megacities, infrastructures and autonomous systems will push nature (our energy supplier) further and further back. This creates the darkest scenario that "prophets" have been warning of for centuries. In a song I wrote as a melodramatic teenager in the late 1970s (Still Fighting): "Biology defeated death" (origin of life from inanimate matter), "society defeated biology" (origin of cultures and societies from a biological species, which has come to control biology), "technology defeats society" (artificial "life" that, as a technocracy, increasingly marginalizes democracy and supplants life). A lifeless world with only Artificial Intelligentsia. A little ponderous, but still...

Dynamical system theory

At that time I was not yet familiar with the dynamical system theory. And also not with Kleiber's law, which shows that in (animal) organic systems an increase in size goes hand in hand with a decrease in metabolism (conversion of raw materials into energy and "outcomes", including behaviour, with an exponent of about 0.75; in plants just below 1). On the other hand, this exponential factor (r-number) is above 1 in inorganic systems, including fire, weather systems and technological systems, they continue to rage until no more raw materials and/or energy can be absorbed and then disintegrate.

It becomes less abstract, and easier to imagine, if you think about the consequences of endless renewable energy for car mobility, resulting in more miles per person, even further expansion of the physical infrastructure, even more use of materials, even more disintegration of regional connections.. Always be careful what you wish for, especially when it comes to scalable technologies.

To make this insightful, think of the well-known fairy tale, in which a simple but intelligent person helps the king to defeat the enemy. The happy king asks this person - somewhat anxious, everything is allowed - to make a wish, to which he replied: "I'm just a simple person, take a chessboard, put 2 grains of rice on the first square, 4 on the next, so always double the previous square, until square 64". The king answered reassured: "Oh, is that all". At square 30 he already needed more than a billion grains of rice ($2^{30} = 1.073.741.824$). Soon after, he went bankrupt. With exponential growth above 1 you must be careful what you wish.

Sustainable energy is possible and needed, as soon as possible! Above all, a radical shift in consciousness is needed to realize that we are part of nature. Stop letting the lifeless overgrow us. The Inner Development Goals show the way: Small-scale, regional, slowing down and connecting ...