

As Capitalism Fails, We Need A Roadmap To Survive Climate Change



Paavo Järvensivu

As we enter an era of energy transition and the effects of climate change become more dramatic, our need for new forms of economic thinking is becoming increasingly urgent. The existing economic theories and models are clearly ill-equipped to address the intertwined challenges of a massive energy shift and climate change because they are all linked to the era of material abundance and cheap energy resources. The existing economic system has failed and if it continues it will lead to inestimable catastrophic consequences. But what would the policy framework of the much-needed new economics on energy, climate and environment look alike?

C.J. Polychroniou: Dr. Järvensivu, how did your research unit end up producing the background paper for the U.N. Global Sustainable Development Report?

Paavo Järvensivu: BIOS is an independent, multidisciplinary research unit, launched in Helsinki in 2015. Our basic task is to study the effects of environmental and resource factors on Finnish society and develop the anticipatory skills of citizens and decision-makers. To be able to do that, our research, of course, deals with the same issues also globally.... Moreover, we felt

that due to the urgency to act on the climate crisis, researchers need to engage much more proactively outside the academic community. We dedicate much of our time on ongoing dialogue with decision-makers, journalists and many others.... There are few [other] research teams that would systematically aim at a comprehensive view of the political, economic and cultural changes caused by mitigating and adapting to climate change.

The paper your research unit produced for the U.N. claims with certainty that we will soon be entering a new energy era. What is this new energy era all about, and how will it replace the capitalism of today, which relies mostly on fossil fuels for supplying the vast majority of our energy needs and, subsequently, for growth?

The question of future energy can be approached as a [carbon] source and [carbon] sink problem. According to some estimates, the depletion of accessible fossil fuels would drive dramatic changes in the human energy system. This is true in a certain time frame, but climate change, or the inability of ecosystems in their current state to handle all the emissions from the excessive use of fossil fuels, gets us there first. Mitigating climate change requires a rapid decarbonization of the energy system — not only electricity generation but also heating/cooling and transportation.

Most likely we need to reduce energy consumption in order to succeed in rapid decarbonization. Replacing fossil fuel infrastructure with low-carbon solutions is such a demanding task physically, financially and organization-wise that the chances for succeeding improve dramatically if we lower overall energy consumption at the same time. This would be in line with also other environmental goals, especially with fostering biodiversity. In practice, this would entail qualitative changes in people's lives through an emphasis on public transport and walking and biking, and perhaps relaxing on the (very new to humankind) requirement to have the same temperature inside throughout the year.

If the major economies don't succeed in decarbonization, the global fossil economy is in for a rough ride. As an example, in a world with escalating geopolitical tensions — for instance, due to climate refugees — the position of fossil fuel-importing countries is weakened. Those countries — such as Finland, where I'm from — would be better off with less dependence on fossil fuels. Acting on this proactively, investing a lot on low-carbon infrastructure, should be on the high priority list of current and next governments.

Yet, Donald Trump's energy plan is all about more fossil fuels and fewer rules for environmental protection, so the question is this: Will the new energy era begin when fossil fuels run out?

Again, globally speaking, it is climate change that sits on the driver's seat toward the new energy era. But locally, many fossil fuel plants are [getting too expensive](#) to operate. The depletion of cheap, good quality fossil fuel sources will damage many economic actors and investors.

For Trump, though, fossil fuels don't seem to be about economics. Rather, he's using fossil fuels to [say]: "I won't let anyone come and take away the unnecessarily big, loud and gas-guzzling pick-up truck that you hold so dear." This way, people are clinging on to certain symbols, and more or less artificial political divisions are being made. One sad collateral damage in all this is science-policy relations.... We are now seeing this also in Finland with the rise of the [right-wing populist Finns Party](#). They are seeking to gain votes by saying that the "climate-hysterical" will come and get the sausages out of the mouths of the working people.

Climate change is linked in your report to some of the major economic and political problems confronting many of today's societies, including economic inequality, rising debt levels, slow economic growth and unemployment. What exactly is the link between climate change and some of the economic challenges mentioned above?

Looking forward, we can easily see that climate change is tightly linked to those challenges. Decarbonizing societies requires massive investments into basic infrastructure, which raises the costs of heating and cooling homes, transportation, and so on, at least for the next decade or two. Much of current economic capacity will be allocated to realizing the transition, leaving less capacity for doing all the other things. At the same time, we have to ensure that everyone has the means to satisfy their basic needs. With rising basic costs, this involves significant income transfers.

A managed [transition of jobs](#) will also be needed. A lot of jobs are currently directly or indirectly dependent on the continued use of fossil fuels and, thus, will be threatened by the low-carbon transition. The workers need to be re-skilled and new jobs will need to be created for them. It should be added that there is no point in creating jobs for jobs' sake, but we can be sure that there is more work to do in decarbonization than there are workers.

Climate change will inevitably proceed to some extent due to historical emissions. Some will be more prepared than others to adapt to the effects. Generating these future capacities now is also a matter of justice and equality, having to do with physical infrastructure at hand, but also with skills and cultural practices.

Looking back, we can see that the growing use of fossil fuels was not an accidental but rather an elemental part of the growth of industrialized economies. We could not have had this kind of industrialization without catalyzing climate change. The growth in productivity was not only due to innovative technologies and human ingenuity in general; the machinery needed fossil fuels to function. Economic growth has meant growing energy use. Economic growth has stalled at the same time as the cheapest and best fossil fuel sources have become depleted and the costs of climate change have become more apparent. It is only now that we are gradually learning how to power some of our machinery without fossil fuels.

Some have also made the argument that with the overall energy costs rising, economies have been forced to seek growth through ever more debt, postponing the payback. And now that we are not seeing much growth — and growth in energy — the debt cannot be paid back in full. Private debt needs to be carefully managed, because there are a lot of economic expectations tied to fossil fuels that cannot be fulfilled. It is the job of governments to pave the path from current financial structure to the post-fossil fuel one.

Your report suggests that a new economic thinking is needed to address pressing issues such as human migration. What elements need to be incorporated into the new model of economic thinking for the era of energy transition and climate change?

The low-carbon transition needs to be planned, financed and coordinated. We need economic thinking and tools that make this possible. Orthodox economics and market-oriented mechanisms are not enough, especially because they lack the power to direct different economic sectors and actors toward a shared low-carbon path.

First of all, we need a mid- to long-term vision, a decarbonization roadmap, so that economic actors can orient their thinking and strategies around something predictable. The roadmap must be based on a multidisciplinary scientific understanding. It will probably be layered to encompass cities, states and the nation. Or in Europe, cities, countries and the EU/Eurozone. A successful

roadmap acknowledges the deep connections in and between economic sectors and large-scale infrastructure systems. For example, in transport, one cannot bet on electric vehicles, the other one on biofuels, and the third one on public transport. Although those all can coexist, we have to know where the emphasis will be. The choice has dramatic consequences for electricity and fuel production, vehicle production, electric vehicle charging infrastructure and city planning. With investment cycles of around 10 years, we don't have the time for second guessing.

We can think of the economic challenge as having two components: limiting emissions and coming up with new solutions. Cutting down and investing. Carbon pricing, the market-oriented mechanism supported by most economists, punishes for bad behavior. That's good, but that's not enough. For many years, there has been a lack of long-term investments in the U.S. and in Europe. A central reason is that the investment horizon seems rather fuzzy. Everything seems to be in turbulence. The roadmap will help in this, but it also seems clear that significant public investment programs are needed as well. The public authority [i.e., the state] is the only body that has the funds, must think long-term and can stomach the financial risks associated with the transition. Modern monetary theorists have done a good job in analyzing economic sovereignty and defending the fiscal and policy room that governments in reality have.

The roadmap will also help in coordinating the activities related to the transition. But we need to go further. For instance, there are things we don't yet quite know how to accomplish that need research and development. I am most familiar with the case of district heating in Helsinki — how to do it without burning coal, wood or anything else. There are both social and technical issues that need to be overcome. The mayor of Helsinki just promised a million euros for anyone that comes up with a solution. But of course, it's a matter of continuous development rather than a stroke of genius.

Research and development efforts need to be much more focused than they have been for the last few decades. We need to start solving the most acute problems, and to accomplish that, we need to get cities, universities and businesses to collaborate around shared goals. Economist Mariana Mazzucato has described a model for this and labeled it mission-oriented innovation policy. This is how we got to the moon and built the internet. Or in Finland, created Nokia, the once-leading mobile phone maker. Why would it be impossible now to come up with

things that actually matter for the world?

This interview has been lightly edited for clarity and length.

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