

'The energy transition has not yet begun'

Jean-Baptiste Fressoz, historian of technology, science and the environment

Hervé Kempf with Jean-Baptiste Fressoz

Jean-Baptiste Fressoz (France, 1977) is a historian of science, technology and the environment and professor at the Ecole des Hautes Etudes en Sciences Sociales in Paris. He has just published *Sans Transition. Une Nouvelle Histoire de L'énergie* ('Without Transition. A New History of Energy'). He is also the author, with Christophe Bonneuil, of *The Anthropocene Event: Earth, History and Us* (Points Histoire) and *The Joyful Apocalypse. A History of Technological Risk* (Seuil).



Jean-Baptiste Fressoz, historian of technology, science and the environment in Paris in December. / (c) Mathieu Génon (Reporterre)

In your opinion, the energy transition is not happening. What is the problem?

The transition is the idea that we will change our energy system in 30 or 40 years to deal with the climate crisis. But if we look at it historically, we see how scientifically biased this notion has been. For example, We did not transition from wood to coal during the Industrial Revolution. The Industrial Revolution was not a transition; it was a vast material expansion.

In 1900, England, a very large mining country, consumed 4.5 million m³ of wood per year for use as props in mine galleries. In the 1750s, the English were burning 3.6 million m³. Thus, to extract coal alone, the English used more wood in 1900 than they burnt in 1750.

So oil has not replaced coal?

No, that is the wrong view. For example, oil is used to run cars. But in the 1930s, it took about seven tonnes of coal to make a car, the same amount by weight as the oil it burned during its lifetime.

Coke is needed to reduce iron ore production, which consumes enormous energy. For a long time, it was obtained exclusively from coal. Even today, 1.7 billion tonnes of steel are produced every year. If we wanted to make it green, we would need 1.2 million wind turbines. And if we wanted to do it with hydrogen, we would need the amount of electricity currently produced in the United States.

More than a sum of energies, industrialisation is a symbiotic expansion. Until the 1960s, it was impossible to

Despite innovations, the consumption of all materials is growing.

extract coal without wood. One thing to remember about industrialisation is that we have consumed a greater variety of materials, each in greater quantities. If some materials are declining, it is because of bans; for example, the use of asbestos has fallen by 40-50% since the 1990s.

You argue for a material history in the sense that the world is made of materials...

If we want to think seriously about the environmental crisis, we should not focus on technology but on the quantities of materials. The important thing is that despite innovations, the consumption of all materials is growing.

Have all your predecessors in the history of energy been wrong?

The experts did not talk about transition until the 1970s because they saw that coal was not being phased out. It was the 'futurologists' who started talking about it, and historians adopted the technocratic vocabulary from the 1980s onwards. They were influenced: you're a historian of the steam engine, and suddenly, you become a historian of the transition. It's much more chic.

Today, the transition is still not taking place, and despite the rise of renewable energies, fossil fuels still account for 80% of world energy consumption...

Yes, it has remained more or less stable since the 1980s. We have not yet passed the peak for coal or oil. There is still a tremendous amount of fossil fuels. We have not started the energy transition yet. Thanks to technological progress, we have reduced the carbon intensity of the economy: it takes half as much CO₂ to produce one dollar of GDP as in the 1980s. But in volume terms, fossil fuels are more important now than they were then.

Why is the idea of energy transition so popular?

The transition discourse is, first and foremost, an 'era' discourse: the coal era, the steam era, the electricity era, and the oil era. It is a classic discourse of industrial promotion. It allows a new technology to be placed in the grand scheme of human history. The problem is that intellectuals have taken it seriously.

In the 1860s, people began to talk about the 'age of steam' as a way of marginalising human power. Workers were presented as resisting progress, modernity as the meeting of genius and matter. Then, at the end of the 19th century, when people started to talk about electricity, talking about an electric age allowed a rather classical gesture to be made in the intellectual world, that of the tabula rasa, the tabula rasa from which one starts again.

How did we arrive at the concept of transition?

After 1945, a group of scientists began to talk about transition: the American 'atomists' of the Manhattan Project. A calculation was made to demonstrate the extraordinary efficiency of nuclear generation. These scientists wanted to show that what they had invented was a tool for catastrophic death and the key to humankind's survival. It would provide abundant and unlimited energy. Then, during the 1970s and the oil crises, the notion of energy crisis spread, as well as that of energy transition.

US President Jimmy Carter played a key role in this spread, with a major speech on 18 April 1977. He said: 'In the past, we have made two energy transitions, from wood to coal, and then from coal to oil. Now, we have to make a third transition. What he foresaw was a doubling of coal extraction in the United States. There will be less oil, so we'll take out more coal and liquefy it.

Then, when Ronald Reagan took office, his energy team was led by a Texas oilman whose big agenda was to deregulate and drill more, claiming that the price of oil would come down because of the market and innovation. This is what happened with shale gas. The transition no longer made much sense except to increase US energy independence.

However, environmentalists have begun to take up this vocabulary, which naturalises energy decisions, as an invention of the nuclear lobby and an antiphrase of the environmental crisis.

In its latest report, IPCC Panel 3 explains that transition is a good thing and that we are going to get there. The IPCC is an intergovernmental group, not an international one. This is very important: governments designate who sits on this body. When it was set up in 1988, the United States - which was by far the biggest emitter of CO₂ - appointed representatives from the ministries of industry, energy and agriculture to Group 3. The governments appointed representatives from industry, energy, and agriculture ministries. They had to internalise the economic constraint, which is this group's role. The United States will promote the technology card as a means of transition.

As a result, until the sixth report in 2023, there was no chapter on sobriety [n.d.T.: later, J.B. specifies what is meant by sobriety]. The other problem is that incredible technological choices have been made, such as carbon storage. And here, I think the oil lobby is influencing the debate.

If there is no energy transition, what can we do about the ecological disaster?

We will not be able to decarbonise certain things before 2050, such as cement, steel or plastics.

The first thing to do is to look realistically at what we can do technologically. My argument is not technophobic. Significant technological advances, such as solar energy, have been made in certain areas. But we will not be able to decarbonise certain things before 2050, such as cement, steel or plastics. Sobriety is the key. We must recognise that one of the key issues is the production level.

But mass-producing electric cars, which are by no means carbon-free, doesn't change the problem. You still have to make the car, which is steel, and steel is still carbon. Solar energy has to be seen in the context of a system as a whole, which poses a problem. My book is not a critique of renewables but of the idea of the energy transition: We need to put renewables back into the whole system that they are going to power.

So how can we move towards sobriety?

We have to stop talking nonsense. When our governments pound on the idea that degrowth is idiotic, that there's decoupling, that we're going to make carbon-free hydrogen planes, inevitably people want to believe it. It's a very attractive prospect. But if we don't talk seriously about it, we will never achieve sobriety.

The issue will inevitably become more pressing as the climate wall takes hold, climate crises recur and decarbonisation targets become utterly utopian. Sobriety will become increasingly important.

So, how can we move towards sobriety?

We have to stop talking nonsense. When our governments pound on the idea that degrowth is idiotic, that there's decoupling, that we're going to make carbon-free hydrogen planes, inevitably, people want to believe it. It's a very attractive prospect. But if we don't talk seriously about it, we will never achieve sobriety.

The issue will inevitably become more pressing as the climate wall takes hold, climate crises recur, and decarbonisation targets become utterly utopian. Sobriety will become increasingly important.

Would a new history begin, that of degrowth?

When I say sobriety, I mean material degrowth. We could stop building roads in France without it being a catastrophe. We could stop many planes without much happening; as we saw during the pandemic, we didn't starve to death.

Why is there still so much hope in technology?

Because of an unprecedented focus on innovation, innovation has been confused with the technical phenomenon in general, which is much more massive and broader. What do we really need? How do we distribute the benefits and impacts of carbon?

We can massively compensate populations that can no longer live where they do and imagine hosting them. That's what we should discuss, not fantasising about a carbon-free world in 2050.

Related links:

- The Jus Semper Global Alliance
- Mario Pansera: [Innovate or Die](#)
- Mateo Aguado: [The toxicity of the capitalist mode of living](#)
- Álvaro J. de Regil: [Provoking Awareness and Action for Geocratia](#)
- Álvaro J. de Regil: [The Unbearable Unawareness of our Ecological Existential Crisis](#)
- Álvaro J. de Regil: [Transitioning to Geocratia the People and Planet and Not the Market Paradigm — First Steps](#)
- Milena Radovich / Diego Astiz: [A New Earth Culture](#)
- Aurora Fernández Polanco: ["Environmentalism has not been able to counteract the neoliberal era's cancellation of the future"](#)
- Juan Bordera: [Degrowth under discussion in the heart of the beast](#)
- Jason Hickel: [Degrowth Is About Global Justice](#)

❖ **About Jus Semper:** The Jus Semper Global Alliance aims to contribute to achieving a sustainable ethos of social justice in the world, where all communities live in truly democratic environments that provide full enjoyment of human rights and sustainable living standards in accordance with human dignity. To accomplish this, it contributes to the liberalisation of the democratic institutions of society that have been captured by the owners of the market. With that purpose, it is devoted to research and analysis to provoke the awareness and critical thinking to generate ideas for a transformative vision to materialise the truly democratic and sustainable paradigm of People and Planet and NOT of the market.

❖ **About the author: Hervé Kempf** is a French journalist and writer, editor-in-chief of Reporterre, specialising in ecological issues. He has worked for Le Monde, La Recherche, Courier international and other media, and is opposed to growth and GMOs.

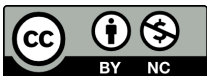


❖ **About this brief:** "The energy transition has not yet begun" was originally published in French in [Reporterre. La média de l'écologie](#) and subsequently in Spanish by [CTXT](#) in June 2024. This paper has been published under Creative Commons, CC-BY-NC 4.0. You are welcome to reproduce the material for non-commercial use, crediting the author and the original publisher.

❖ **Quote this paper as:** Hervé Kempf with Jean-Baptiste Fressoz: "The energy transition has not yet begun" — The Jus Semper Global Alliance, February 2025.

❖ **Tags:** capitalism, democracy, fossil energy, energy transition, ecology, degrowth.

❖ The responsibility for opinions expressed in this work rests only with the author(s), and its publication does not necessarily constitute an endorsement by The Jus Semper Global Alliance.



Under Creative Commons Attribution 4.0 License
<https://creativecommons.org/licenses/by-nc/4.0/>

© 2025. The Jus Semper Global Alliance
Portal on the net: <https://www.jussemper.org/>
e-mail: informa@jussemper.org