
The heart of the problem: we need to talk about energy

We have to talk about the very idea of 'energy', because this is perhaps the centerpiece that will allow us to deal with the climate chaos we are currently experiencing. And we are not aiming to have a scientific debate here. After all, Nobel Physics Laureate Richard Feynman himself stated: “in physics today, we have no knowledge of what energy is”. And so we free ourselves from that scientific debate to focus on what is really at stake when it comes to 'energy': the origin of a war of worlds and worldviews that has left a trail of destruction, violations and injustice.

There are many peoples who do not even use the word 'energy' in their conception of the world. Yet all the forms of subsistence of those peoples and communities who inhabit forests, riverbanks, savannas and other territories could be called 'energy.' When corn grows in the sunlight; when wood is collected and burned to grill a fish; when that fish is eaten and transformed into nutrients; when the wind or the river moves a mill; or even when fire is used to connect with the spirit world. This energy is present in the most diverse daily acts of survival – for humans and non-humans alike. For every environment, season and culture, there is a different way of generating 'energy' to live.

On the other hand, we have the 'commodity people' – one of the ways how indigenous Yanomami thinker and shaman Davi Kopenawa refers to capitalist society– that uses 'energy' as yet another way to accumulate. This energy ignores the cycles of nature and cultural diversity. It turns nature into a 'resource': rivers, wind, sunlight, and, of course, organic materials such as oil, coal and natural gas. In these cases, the focus of energy is not subsistence, but rather that disease so characteristic of capitalism: the insatiable greed for money. And this 'war of worlds' takes place precisely when – both driven by energy and in its pursuit – the commodity people advance on other peoples, generating serious violations.

For many Indigenous Peoples, words have sacred value. What is spoken has agency over the world and the power to make things happen. This is why it is essential to reflect on the invention of this specific idea of 'energy' – because a new world was born from this word.

The world created by 'energy'

Although it is hard to imagine today, the idea of energy has not always existed. The concept of energy as we know it was invented during the 19th century by white men in Northern Europe, in the midst of the Industrial Revolution. This concept has its origins in the “Law of Thermodynamics”, which was developed predominantly by engineers connected to the fossil fuel industry in capitalist society. This alone tells us a lot. Like all technological and scientific inventions, this one is not neutral either: it has to do with race, gender, ideology and political and economic alliances.

Energy is not something that was 'discovered'. Indeed, there are records of oil and natural gas being found at different times and places throughout human history, without the idea of 'energy' ever being dreamed of. This specific idea of energy came about in industrial capitalist societies, when entrepreneurs realized they could use fossil fuels to increase the productivity of machines, control the workforce and accumulate capital.

The theories that gave rise to this concept of energy came about from the characteristics of these fossil fuels and their massive use by industries.

One of the main characteristics of these fuels is that the reserves of organic matter (coal, oil and natural gas) are like millions of years of fossilized sunlight. Therefore, they have incredibly high combustion power. To give an idea, one study showed that the amount of fossil fuels used worldwide in 1997 was equivalent to the light used by all the plants on Earth to grow for more than 400 years. (1)

In addition to their potency, fossil fuels offered other advantages to a society eager for accumulation: they were abundant, easily transportable and easily stored. Thus, it was possible to access large quantities of these fuels and keep machines running independently from the cycles of nature. The combination of these fuels and the capitalist industrial society, with its newly invented steam engines, gave rise to the history we all know: the unprecedented advance of capitalism and colonization.

Let's take a good example to illustrate these connections. In the same 19th century, along the coastal region of West Africa, English merchants were able to navigate for the first time on some stretches of the Niger River – despite the unfavorable currents and winds – because they were aboard a steamboat. The coal-powered engine took European colonization to places it never would have reached on sailing ships. Since then, Anglosaxon companies have exploited fuel sources such as palm oil and petroleum on a large scale in this region. (2)

And how does the idea of energy fit into this story? It acted as an attractive, seemingly neutral disguise that allowed predatory industrial capitalism to advance swiftly and unchecked.

After the theory of thermodynamics was developed, energy came to be understood as a 'thing', something abstract and universally applicable, that could be quantified, and therefore, traded. Moreover, it came to be regarded as an essential resource for human life. The way was paved for the economic elites of an insatiable society to organize themselves around this new necessity that they themselves created (and which, of course, they themselves would supply): energy.

Let us look a little more closely at how this happened. 'Energy' came to be seen as an abstract substance, without taking into account its relationship with the social and natural contexts of its origin. It can be produced, transported, stored in large power plants (or in small batteries), and distributed, without the relationship between its production and consumption being visible.

This boosted capitalist society in several ways. It allowed factories to operate anywhere, and around the clock. It also made energy accessible on a large scale for a large number of homes – expanding the consumer market and creating a new, energy-dependent lifestyle. This abstraction also mystified energy production; that is, 'ordinary people' no longer understand the techniques used to produce energy, and they have become increasingly dependent on energy companies. The abstract nature of energy also makes it easier to consume it without questioning it much. Perhaps our societies would react differently if we could establish a direct relationship between each button we push and the destruction of huge areas of forest – destruction that threatens communities and forest-dwelling peoples in order to exploit coal mines, oil fields, lithium mines, and wind farms. (3)

The conception of this 'energy' as universal makes it possible to convert and compare different forces: the force of water, the muscle power of an ox, wind power, the heat of wood burning in a fire, the heat of fossil fuels, sunlight, etc. Everything has been converted into 'energy.' With this shift in perspective, certain geographical features began to be seen as energy sources, and nature began to

be measured as tradable 'natural resources.' A river with a steep drop from which no energy is extracted; a coal, lithium or uranium field that is not exploited; a region with constant winds and no wind farms – all of these have come to be seen as wasted 'natural resources.'

In their eagerness to find new sources of energy, multinational corporations and governments of the 'commodity people' examine maps in search of new territories where they can extract natural resources according to their economic interests. 'Energy' is a business in and of itself, as well as the fuel that turns the gears of industrial capitalist society at full speed.

Under the attractive disguise afforded by the concept of 'energy,' these corporations and governments are able to go about their business – that is, to satisfy the growing demand for energy and make it available to everyone – as if it were a 'humanitarian mission.' Even the United Nations has come to consider universal access to energy as a fundamental human right. Powered by fossil, water, wind and solar energy, corporations are rapidly invading and intervening in the diverse worlds of other peoples with whom they share the planet.

Worlds collide: energy-driven violence

For many Peoples, their first contact with the white, western world was, and still is, frightening, to say the least. As a general rule, this encounter occurs in a violent way, when colonizers invade their territories and devastate them in search of 'natural resources.' Once colonizers began to be driven by energy, it became increasingly difficult to stop them and even expel them from the territories they invaded.

For example, in Nigeria, the Ogoni, Ikot Ada Udo, Oruma and Goi Peoples have had their rivers and estuaries destroyed. This was due to large-scale oil extraction that occurred after multinational companies arrived in the country. In 2013, a judgment against Shell recognized some of these impacts. However, other companies – such as Chevron Corporation, ExxonMobil and Nigeria's state-owned NNPC – continue to operate in these areas, with multi-million dollar investment plans to explore oil in the Niger Delta region in the coming years. (4)

We could also talk about the Cofán, Siona, Secoya and Waorani Peoples based in the northern Amazon region in Ecuador, as well as the Napo-Kichwas and several Shuar families who also live in this area. They all saw their world violently devastated by U.S. oil company, Chevron Corporation (then Chevron-Texaco). For 26 years, the company extracted more than 1.5 billion barrels of oil, and dumped huge amounts of toxic waste in the environment. (5) It is difficult to imagine the impact that something of such magnitude can have.

“It makes us very angry when they burn trees, destroy the land and contaminate the rivers. It makes us angry when our women, children and elderly keep dying from the smoke of epidemics [i.e., the deaths caused by the invasion, especially epidemics]. We are not enemies of the white people. But we do not want them to come and work in our forests, because there is no way to compensate us for the value of what they destroy here.” These words from Davi Kopenawa join the voices of leaders from different Peoples who have risen up to defend their territories.

The list of Peoples and territories that have been invaded is extensive. But the ways in which these diverse worlds have collided with the white people's world are always similar. At the heart of this conflict are the different conceptions of what energy means for these Peoples, and what it means for white people.

Different energy for different worlds

Antônio Bispo dos Santos, called Nego Bispo, is a Brazilian thinker from a rural quilombola community. He argues that subverting the words of colonizers is a counter-colonial strategy. (6) This is why he decided to name the people's conception of energy 'organic energy.' He explains that this was the energy that propelled the ox-driven carts he used to go to town. For him, "Everything that all living beings can access is organic. What they cannot fully access is a commodity, whether it is poisonous or not." (7) Organic energy respects different lives and cultures and is directly linked to nature and its environment.

In contrast, Bispo suggests that the energy of the colonizer is 'synthetic energy.' He has observed the neo-colonialism of the 'energy transition' that has come to his community, with its gigantic wind farms and solar panels that have driven away all living beings. He says "the wind and sun are taken and synthetically transformed into electric energy". According to Bispo, colonizers always seek to transform everything into something 'synthetic'; that is, they always want to homogenize things, so that everything is the same. According to Bispo, colonizers do this because they cannot stand there to be a diversity of worldviews or cosmovisions; they are 'cosmo-phobes,' he says.

Thinking about 'organic' versus 'synthetic,' as Nego Bispo proposes, helps us to better understand the difference between these worlds and the different energies that move them. According to the worldview of industrial capitalist society, humanity is universal – that is, it is all the same – as is the capitalists' 'synthetic energy'. And human rights, which white men invented to solve the problems they themselves have caused, guarantee the right of all of 'humanity' to develop like they have. But industrial capitalists do not take into account that there are other peoples, with other worldviews, who may not want to be like them. Indeed, these peoples negatively view the 'developed' ways of life of this industrial society, which is eager to accumulate things and is totally disconnected from nature.

In reality, when rich industrialized nations bring what they call 'development' to other peoples, they always do so to exploit their resources and further enrich those who are already wealthy. They expropriate the true wealth of these other peoples – their territories and the nature. And they 'include' these peoples in this 'universal humanity' – but in conditions of poverty. People are considered poor if they do not have shoes, masonry houses, canned food, energy, and a long etcetera. All of these deficiencies, as a rule, are things that must be bought with money. In other words, this 'development' is nothing more than good old 'colonialism.' And 'energy' is also part of the 'civilizing package' that industrial capitalist society uses to 'include' other peoples.

But not everyone necessarily needs this 'synthetic energy' in equal measure. As Davi Kopenawa said: "For us, the little that we have is enough. We do not want to pull the minerals out of the earth; we want the forest to always be a quiet place, and for the sky to remain clear so that we can see the stars when night falls." (8)

Like the Yanomami people to which Kopenawa belongs, many of these other peoples live well with the lifestyle offered by 'organic energy,' to use the term coined by Nego Bispo. They are used to having things that they themselves can make, which they don't have to pay for. They are used to doing what is right during the rainy season and what is right during the sunny season – working with nature's rhythms, and producing enough to have a healthy life without many material goods. Some villages even develop systems to generate 'organic energy' with what is around them, with what nature provides. They develop biofuel systems, or small windmills powered by the strength of their rivers or the wind, among other ways of generating 'energy' with autonomy and dignity.

And, in fact, many of these peoples would describe white people with pity. The lights and technological gadgets that many white people flaunt as trophies do not inspire envy among all peoples, despite what they may think.

With his powerful voice that echoes from the deepest part of the Amazon rainforest, Kopenawa speaks a little on this matter, and many other peoples would surely agree with him: "But white people are very different from us. They must think they are very smart because they know how to make tons of things and they do so non-stop." And he goes on: "They are always focused on their objects. They do not cease to manufacture them and they always want new things. Therefore, they must not be as smart as they think they are." (9)

From her village, Mbyá Guaraní leader Jerá Guaraní makes a provocation to the people of the developed world, and invites white people who call themselves 'civilized' to "become savages, to become uncivilized people. Because all of the bad things happening on planet Earth are the work of civilized people – people who, in theory, are not savages." (10)

The solution cannot come from the problem

Since the invention of the concept of energy to the present day, a lot of fossil fuels have been burned to generate energy. The excessive use of these fuels is pointed to as the main culprit for the climate chaos we live in. But the idea that universal access to 'energy' - the synthetic kind - is a good thing and a human right absolves 'energy' of all responsibility for this apocalyptic scenario in which we find ourselves. Not only is this kind of energy not seen as a culprit, it is at the forefront of all the supposed solutions to the climate crisis (which are being promoted by the biggest polluters): 'energy transition,' 'clean energy,' 'green energy,' 'energy efficiency,' just to name a few. And this should concern us, because these 'solutions' are a big part of the problem.

Some may think that, by replacing fossil fuels with 'green energy' and implementing the much-heralded 'energy transition,' there would be time to stop global warming. But they are wrong. Several studies show that the increased use of 'clean' energies has not led to a significant reduction in the use of fossil fuels, but quite the opposite. (11) (12) The data show that – in spite of all the climate agreements – governments, banks and institutional investors continue to invest billions of dollars in fossil fuel development, and that this sector will grow exponentially until 2050. (13)

Furthermore, to produce this so-called 'green energy' requires sacrificing the territories of many peoples who live in forests, on riverbanks and savannas, among other places. These territories contain lithium deposits to produce electric car batteries, balsa wood to produce wind turbines and huge areas that are deforested and converted into biofuel monocultures – to name just a few examples. Generally speaking, the basis for this 'green energy' lies in the destruction of territories in the Global South to supply energy to the Global North. And this devastation intensifies global warming. (14)

In this context, some might suggest increasing 'energy efficiency' as a solution – that is, using products that consume less energy. In theory, this would supposedly reduce overall energy demand. However, several studies show that these technological changes usually lead to an increase in total energy consumption, due to the incentivized production, consumption and infrastructural expansion that such technologies bring with them. One example of this is how energy demand increased more rapidly in the sectors with the highest efficiency gains: transportation and household energy consumption. (15)

The root of the climate crisis we are experiencing does not lie in the energy grid, but in the very logic of 'energy' and its use to benefit the elites of industrial capitalist society. 'Synthetic energy' not only drives the machines of this society, but is the basis for the worldview of these 'commodity people.' And it has lent colonialism a nice disguise to hide behind: the idea that energy is a universal and unquestionable 'right.'

In order to propose serious solutions to the climate crisis, we must question the very idea of 'energy.' There are many peoples with different worldviews, who for years have been showing that other ways are possible. We must support the daily struggles of communities against all destructive 'energy' projects – whether they are fossil fuel projects or 'green.' Furthermore, we must increase the search for 'organic energy' sources that strengthen the autonomy of peoples.

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- (1) University of Utah, [Burning buried sunshine: human consumption of ancient solar energy](#)
- (2) WRM, [The unequal and perverse exchange between Nigeria and colonialist corporate powers: from fossil fuels to industrial oil palm plantations and REDD](#)
- (3) Watchdoc, [Sexy Killers \(full movie\)](#)
- (4) APNews, [Nigeria moves to restart oil production in vulnerable region after Shell sells much of its business](#)
- (5) WRM, [Oiled forests – the case of Ecuador](#)
- (6) Quilombola communities are black communities made up of an ethnic-racial group, with their own cultural identity and a particular historical trajectory that comes from their resistance to slavery and oppression.
- (7) [A terra dá, a terra quer \(Book in Portuguese, without an English translation\)](#)
- (8) A queda do céu - palavras de um xamã Yanomami, Davi Kopenawa e Bruce Albert (p. 356)
- (9) A queda do céu - palavras de um xamã Yanomami, Davi Kopenawa e Bruce Albert (p. 418)
- (10) Jerá Guarani, Piseagrama. [Tornar-se selvagem](#)
- (11) Planet: Critical, [Techno-Optimism Won't Save the Day](#)
- (12) "More and More and More", Jean-Baptiste Fressoz
- (13) ["Who is funding fossil fuel expansion?"](#)
- (14) WRM, [The global threat of oil and the path towards post petroleum societies - WRM Boletim 196](#)
- (15) The Corner House, [Energy Alternatives: Surveying the Territory](#)

The entire discussion of the concept of energy in this article has been inspired by and is based on

various texts and research by The Corner House and its collaborators. Below, we list some of these resources for those who are interested in delving more deeply into the subject:

- [White climate, white energy: a time for movement reflexion?](#)
- [Energy Alternatives: Surveying the Territory](#)
- [Energy, Work and Finance](#)
- [Energy Security For Whom? For What?](#)
- [Calor, Tiempo y Colonialismo](#)