

Resignifying Energy Transitions: Some Latin American Perspectives

This article summarises and synthesises a recent dialogue¹ on the need to re-signify dominant proposals for an energy transition. These initiatives, participants agreed, are only deepening environmental problems and social conflicts in Latin American territories. The debate, organised in September 2022 by the Instituto de Estudios Ecologistas del Tercer Mundo and other groups and networks, included Verónica Villa from Mexico, Tatiana Roa Avendaño from Colombia, Gabriela Cabaña from Chile, Cecilia Chérrez from Ecuador, Larry Lohmann from the UK and others.

During the discussion, consensus was reached on at least three main points.

First, mainstream energy transition initiatives tend to perpetuate the colonialism inherent in the fleeting fossil fuel era, rather than addressing the fundamental contradictions of energy. For example, we can look at two main strategies in mainstream transition initiatives. The first involves devoting huge resources to simply trying to change energy sources, replacing them with so-called “renewables” such as green hydrogen or wind power. The second strategy involves attempting to improve the “efficiency” of production and consumption through digital technologies. Adopting these approaches unquestioningly, as if they could solve energy crises, is as disabling and destructive to life, sovereignty, abundance and community as the practices of the fossil fuel era.

Second, an effective energy transition must reconceptualise energy. This transformation must involve deeper cultural and political changes that properly value the permanent cycles of heat, sunlight, as well as the resulting movements of air, water and biomass. Instead of conceiving of energy as an ephemeral set of oil wells and pipelines, transmission lines and undersea cables, coal mines and giant solar and wind farms, we must re-envision it as an enduring pattern that includes the flowing streams, the flows of nutrients from the soil to the food of our communities, and the actions of our own bodies. In doing so, we can understand energy as something that is intrinsically connected to our lives and the reproduction of our lives.

Third, given that the harms of the current energy system are felt throughout society, an energy transition should not be seen simply as a technical matter of switching from one energy source to another or making consumption more “efficient.” The process of re-signifying the transition must involve a wide variety of communities from different contexts, for whom a genuine transition is essential. A variety of organising strategies are currently being explored that involve communities from different backgrounds, from coal miners to anti-extractivist communities, from rural populations to lifelong city dwellers. These communities are coming together in shared debates about the broader political and social changes and new policies needed to lead the energy transition.

I

The current fossil system of oil wells, pipelines, coal mines, cables, power pylons, along with the colonial social organisation that accompanies them, is a temporary accident, as Tatiana Roa Avendaño of Censat Agua Viva in Colombia calls “an exception in human history.” Fossil fuels, Roa explains, are unusual in many ways. They have an unusual energy density. They are unusually

¹ <https://www.facebook.com/AccionEcologicaEc/videos/di%C3%A1logos-ecologistas-resignificar-la-transici%C3%B3n-para-la-defensa-de-los-pueblos-y/3326282140952060/>.

easy to transport and use, compared to wood, for example. Moreover, for more than a century and a half it has been possible to keep their cost low while disregarding most of the environmental and social damage they cause. It is only by virtue of these characteristics that their current high and wasteful use of energy among the rich has been possible. It is unrealistic to expect these characteristics will be found in any other future energy source. To get the same performance from so-called “renewable” energies, for example, would require appropriating impossible amounts of land and life. The mere attempt to appropriate such amounts of land would lead to unprecedented injustices.

Hence, a return to a more reasonable conception of energy is inevitable. This is one that recognises that what is permanent in the relationship between humans and energy are the slow cycles that have always been intertwined with the flourishing of the community: the food that comes from the earth, nutrients from the soil, light from the sun, the power of the wind and rivers, even the lightning from storms. Human beings themselves are energy. Our bodies – muscles, bones, tendons, brains – are what produce movement; it is our human energy that has transformed the world for millennia and will continue to do so when fossil fuels disappear. The age of fossil fuels has made this reality less obvious. We often look around us and see only energy made in the image of oil, coal and devices for extracting and using them in the very short term, rather than the long cycles that have always sustained humanity.

Resignifying the energy transition means reclaiming this now stigmatised sense of energy itself. It means forgetting about trying to find “renewable” ways to feed the same old energy infrastructure of industrial capitalism, with all its pipelines, pylons and proliferating demand. It means rejecting the fantasy (one could also say the illusion) that moving from fossil to non-fossil energy will single-handedly solve the climate crisis or the crises of colonialism.

The case of hydrogen offers an important illustration. As Gabriela Cabaña, social anthropologist, energy policy researcher and founder of the Centro de Análisis Socioambiental (CASA) in Chile, points out, hydrogen has long been a key energy carrier in sectors that are difficult to electrify, such as oil refining, steel and fertiliser production. At first glance, it looks like a climate-friendly fuel because it does not produce greenhouse gases at the point of combustion. The problem is that most hydrogen today is manufactured in a process that uses fossil fuels, which do produce greenhouse gases. The solution proposed by Northern environmental policy is to produce hydrogen by hydrolysis using electricity produced from wind and solar farms, which supposedly would make it “zero emissions.” However, for such “green hydrogen” to be competitively priced, it must be produced on a large scale with large investments. Where can land cheap enough for this be found? In places like Chile, where solar and wind land grabbing is already creating a lot of conflicts. Hydrogen also has a lot of technical problems and challenges in storage and transport, for which no clear solutions are on the horizon.

The rush to get green hydrogen off the ground is already having concrete impacts at the level of countries that would become exporters to the Global North. For example, in Chile, solar generation capacity is being installed in places that already suffer from high ecological stress and are being treated as sacrifice zones for the industrial economy. The new hydrogen business will not benefit affected communities or address the problems of energy poverty. Instead, like the country's agribusiness, it will focus on exports. Current plans call for the construction of 300 gigawatts of “renewable energy” infrastructure for hydrogen production in the country by 2050, up from 16 gigawatts today. Most of the hydrogen will then be shipped to Europe in fossil-fuelled ships to power old fossil-era industries and transport systems that now want to appear “green,” while the

environmental and social costs will be borne mostly by Chile.

The same pattern is repeated in the Atacama desert, where lithium is being mined on an ever-increasing scale to produce lithium-ion batteries needed for Europe's supposedly "climate-friendly" electric cars. The large-scale wind farm developments now underway also often depend on the continued extraction of minerals, fossil fuels and other raw materials in the South and in peripheral areas of the North itself. In addition, they generate a lot of waste and have a short lifespan. In several places, the growing reliance in the North and parts of the South on electricity for cars and other appliances that appear "clean and green" is expanding dirty sacrifice zones elsewhere. In Latin America, where the appropriation of land and life is accelerating in the name of reducing carbon dioxide emissions, democratisation and community control of energy are simply not on the official transition agenda. In short, the so-called "energy transition" in Europe does not look like a transition at all to many people in Latin America, limiting the very possibility of a meaningful energy transition in the South.

But if simply changing energy sources cannot lead to a real transition, neither can much-heralded new "efficiency" programmes facilitated by digital technologies. As Veronica Villa, an ethnologist working in Mexico with ETC Group, points out, the advanced forms of control, data processing, data storage, artificial intelligence and governance enabled by new computing technologies depend on a vast physical infrastructure of servers, data centres, satellites, antennas, 5G equipment, power transmission lines, extraction of fossil fuels, metals and rare earths, etc., not to mention the undersea cables that trace ancient slave trade routes. The data needed to run these huge physical systems is "big data" from everywhere, not just small amounts of computer-readable information from single sources. Conversely, the only machines capable of creating, collecting and searching for patterns in this big data are huge, resource-hungry physical networks. Big data and large computer networks require a great deal of energy to operate. Machines that supposedly increase efficiency are actually increasing energy use, not reducing it. In 2017 it was estimated that by 2025 the new processes of data creation, manipulation and exchange of information between people and machines, and between machines themselves, would consume one-fifth of the world's electricity.²

Take the example of digital agriculture. This requires an immense amount of data from a large number of plots and animals, including information on moisture, microbes, climate, pests, and so on. Data is needed to build hyperspectral images, to know market information and sources of seeds and chemicals. Only through a huge infrastructure of sensors and processors providing big data can the artificial intelligence (AI) machines inside the new tractors or the new drones or the new electronic tablets start to make their decisions about what to grow where and how to irrigate the land and apply chemicals to it. Digitised agriculture comes together with AI-based food transport and delivery and online shopping networks, as well as blockchain-based "smart contracts" between buyers and sellers. These additional links in the digitised food chain require even more sensor networks, data centres, electricity sources and transmission lines. However, collecting real-time data on maize crops in the United States alone would require the same amount of energy as a country like Senegal. So where can one find any trace of a credible "energy transition" in such developments? This seems to represent quite the opposite, as the claim to use new digital tools to increase the energy efficiency of an agricultural system structured around fossil fuels requires, paradoxically, the expansion of that very system.

² Andrae, Anders, 2017/10/05, Total Consumer Power Consumption Forecast, available at https://www.researchgate.net/publication/320225452_Total_Consumer_Power_Consumption_Forecast.

Moreover, this kind of “transition” actively undermines the sources of the alternative transitions that the planet actually needs. Above all, the new digital farming serves the interests of old-guard agribusiness such as the chemical firm Bayer Monsanto; machinery corporations like John Deere; and fertiliser corporations like Yara. Then there are the veterinary pharmaceuticals; meat and alternative protein companies, such as JBS and Tyson; agricultural commodity companies, such as Cargill; retailers, such as Walmart; food processors, such as Nestlé or PepsiCo; and food delivery newcomers, such as UberEats or Deliveroo. Such companies are rushing towards the digitisation of the food chain in the close company of the data titans: Google, Amazon, Facebook, Apple, Microsoft, Baidu, Alibaba, Tencent and Xiaomi. Not to be forgotten, moreover, are investment funds such as BlackRock, Vanguard and State Street, which are always trying to find profitable destinations for the huge cash reserves they manage for their wealthy investors. These Wall Street firms are now showing a keen interest in investing in the full range of the digital reshaping of food production and circulation, from seeds, land and fossil fuels to food transportation, delivery to supermarkets and the digital manipulation of consumers through individually targeted advertising.³

It goes without saying that today's state-of-the-art digital infrastructures are, by their nature, far more suited to helping these large corporate interests make profits than to fostering technological or any other kind of sovereignty at the community or even regional level. These digital networks require tools, knowledge, legal rights and amounts of energy that are simply beyond the reach of most communities struggling for greater autonomy. Even the data they process are too big for any single community to have control over. These days, some activists concerned about the spread of corporate-controlled digital technologies are urging ordinary people to try to “take control of their data.” But given the corporate nature of the data infrastructures in question, and of the data itself, that is not so easy.

A major disconnect between community needs and new digital technologies has to do with speed. Who are the real beneficiaries of the increasing speeds at which new machines collect, compute and communicate data? Whose velocity are we talking about? High speed is a great advantage for companies that need to calculate exactly how much pesticide to apply to each of millions of individual agricultural plots, to compete globally in distribution and storage, or to personalise advertising for each of billions of individual consumers. It is also a great advantage for states trying to collate and process the information needed to monitor each of millions of individual citizens. But, as Villa points out, hunger is not going to be tackled by faster data collection, quicker electronic transfers and more efficient exploitation of land to produce the maximum number of calories. On the contrary, it can only be addressed through, for example, food sovereignty, communal land rights, respect for the experience gradually acquired by small farmers and movements to combat price speculation, lack of markets for small producers, peasant poverty and agribusiness control over the cultivation, distribution and quality of food. The healthiest and most democratically distributed food in the world has always come from small farms, orchards, plots and gardens where mechanised “efficiency” and high speed and rapid movement of goods are not the dominant principles. An added layer of centralised digital mechanisation – and the increased energy use that comes with it – is not what is needed for the energy transition that the world requires. For most family farmers currently feeding most of the world, mechanising their plots electronically through drones, robots, undersea cables, orbiting satellites, machine learning, energy-intensive data centres, blockchain and super-fast 5G networks is not a priority. What is more important is, among other things, gaining sufficient political power to prevent land grabbing and the accelerated extraction and use of metals, rare earths, hydrocarbons and hydropower that underpin this same

³ Detailed, sourced information can be found in ETC Group, *The Food Barons: Profit from Crises, Digitalisation and New Corporate Power* (2022) at https://www.etcgroup.org/files/files/barones_de_la_alimentacion-resumen-web.pdf.

digital revolution. Even the digital consumer products used in individual homes, such as Alexa, Siri or “smart” electricity meters, are largely designed to collect data for centralised corporate artificial intelligence machines to do their work, not to defend the slow rhythms of healthy community life. When slow collective thinking is more important than fast computation, new digital tools are unlikely to help provide a path to community sovereignty.

II

The work of Latin American activists such as Roa-Avendaño, Cabaña and Villa shows why “solutions” such as large-scale corporate renewable energy projects or new information technologies in many ways only reinforce the energy and climate crises they purport to address. Their work invites us to redefine what we mean by “energy transition” to take better account of colonialism, extractivism, exploitation, the meaning of land and territory, and the history of fossil fuel infrastructure. They suggest that, rather than simply replacing one unviable energy source with another or deploying new machines to make old ones more “efficient,” the transition must involve what Roa calls a broader “social and cultural shift.” As Cabaña stresses, transition is about power, sovereignty and a “total transformation of our societies, a transformation of our relations that is infrastructural and therefore also political.” It is about “reconstructing our communities and thinking about ways of living that do not depend on the destruction of the planet.” Cabaña adds that

“Sometimes we use the word ‘transition’ because it’s simple to understand, but I think it’s always important to point to the broader anthropological context of civilisation and justice so that we don’t get stuck with solutions that sound good but bring more injustice.”

This requires, for example, going beyond the usual questions about energy transition, such as “How can we fight extractivism and at the same time cope with a global energy demand of 80 gigajoules per person for a world population of 7.8 billion people?” Rather than taking for granted the level and structure of global energy demand referred to in the question, the meeting participants agreed that it is more useful to treat it as the “result of a specific architecture, of a specific political and economic organisation” that can be changed. As Cabaña and Roa- Avendaño point out, “it is quite possible to meet the needs of all people with a significantly smaller energy footprint,” especially if energy consumption is reduced and basic public needs are prioritised over luxury energy use. The alternative – holding constant the aggregate global energy demand created during the fossil fuel era and attempting to meet it with electricity derived from wind and solar farms – merely “opens up new frontiers for extractivism.” The abstract concept of “energy demand,” Villa adds, always needs to be broken down so that citizens have the right to ask concrete questions about what the energy in question is to be used for, and by whom. Abstract energy demand figures, Roa- Avendaño notes, hide the one billion people who do not have access to electricity. They also hide the reasons why these people have been driven out or impoverished by the current energy system, both in the countryside and in the cities. In Colombia, for example, many families are connected to the grid but cannot use electricity because they cannot afford it. In this sense, Cabaña suggests, it may be useful to think of energy policy less in terms of efficiency than of *sufficiency*. That is: instead of asking how to meet an ever-increasing demand efficiently, what if we were to ask how much we need? Efficiency without sufficiency “does not reduce the long-term impact, because it creates rebound effects that increase stress on ecosystems, no matter how efficient we become. If we don’t regulate towards less future demand, we can’t get out of the vicious circle we’re in.”

In what other ways could we “re-politicise the language to talk about energy”? How can we better understand the transition as a cultural shift and make that shift a reality? More importantly, how is the process of re-signifying the energy transition already taking place on the ground?

Participants in the September debate agreed that prospects for radical change go hand in hand with efforts to engage and connect communities with very diverse backgrounds and situations in shared debates about the future. After all, as Villa stresses, “everyone suffers from the failures of the profit system we live in, in one way or another.” To this end, it is important for movements to include both mine and energy workers as well as anti-extractivist communities, lifelong city dwellers and rural populations alike. In Mexico, for example, where so many children suffer from obesity, hepatitis, diabetes and metabolic syndromes, some urban and rural movements could begin by looking at the origins of their ill-health and thus extend their analysis to the rest of their situation as well. In Colombia, as Roa-Avedaño explains, Censat Agua Viva and the Movimiento Nacional Ríos Vivos have insisted that the debate on the energy transition must take place across broad spaces, including mining and energy workers. In that country, social movements have a history of “multi-sectoral articulations in the struggle against extractivism” that have involved efforts to connect Indigenous, Afro and peasant groups with both environmental organisations and workers in the oil, coal and electricity sectors. In these articulations, the tension over what to do with extractive projects has always been present. It should be understood that the aim of the discussion is not to push for the immediate closure of mining or energy projects, but to dare to think more broadly about the transformation of an energy system that has generated so much conflict among communities. What concerns do different groups share and how can the debate move forward? For many, it is clear that there is currently no energy transition, but only, in Roa-Avedaño's words, an energy expansion. But in Colombia there is at least the beginning of a broad debate on the fundamental question of transition as a radical social and cultural change. The debate concerns the need to rethink not only the energy system but everything that is part of our society: how we feed ourselves, how we move, how cities are built and configured, how buildings are designed and constructed, how much energy is wasted, and why we have to stop thinking only about new energy sources that we already know are incapable of filling the place that oil occupies today in our society. From Mexico, meanwhile, Villa stressed the importance of addressing, for example, water, green hydrogen, digital agriculture and issues that have been discussed in previous dialogues, always bearing in mind the integral nature of the crises.

Considering the issue of transition in an integrated way implies recovering a historical perspective. Cabaña recalls that the justifications being used in the current era of climate crisis and energy transitions to sacrifice some territories to sustain life in others are the same ones that have been used for at least five centuries. “Many people who are only now beginning to worry about the present or future impacts of the climate crisis are precisely those who have not been affected by previous waves of ecological devastation caused by the expansion of capitalism.” As a result, they often ignore this historical continuity. It is therefore important always “to go back to the communities that have for centuries resisted the advance of colonialism and the frontiers of expansion” and encourage dialogue between them and other communities. In fact, in Latin America there is already a great sensitivity, even in the cities, to this history. People understand, for example, that energy from hydroelectric dams is not designed to reach communities that live nearby or have been displaced. They understand that addressing the climate emergency without taking into account the other impacts of any action we take is unacceptable because it only reproduces this logic of sacrifice. What is needed is a political approach capable of “weaving solidarity between the global South and the North that allows us to have an honest conversation.”

Moderating the September discussion from the other side of the world, in Thailand, Larry Lohmann pointed to a Southeast Asian example of conflict over “transitions.” As is often the case in Latin America, in Thailand the government (currently a military regime) tends to support false solutions to the climate crisis. Eager to adapt a UN discourse, it promotes an “energy transition” that does not challenge the dominance of fossil fuels. Instead, it advocates using Thai forests as sponges to

absorb the carbon produced by these coal, oil and gas. It also promotes land appropriation for solar energy.

However, an indigenous Karen community in the north of the country is working for a different future. This community is trying to maintain its system of rotational agriculture, which traditionally involves planting rain-fed rice on hillsides. This system relies on a particular sense of land as communal, not individual, property. This ensures that people do not see any particular plot as a source of private profit. The system also depends on a distinctive fire regime, or what is often prejudicially referred to as “slash and burn.” Potential agricultural fields must be prepared in advance by burning them at a certain “dry” time of day, between 12.00 and 14.00, to ensure that the maximum number of weeds are removed from the land. Otherwise, farmers have to buy herbicides to prepare the land, in addition to chemical fertiliser for rice.

Today, however, a satellite regularly flies over Thailand to monitor rural fire for the state. When the satellite detects a “hot spot,” authorities may rush to the area to prevent carbon dioxide from being emitted into the atmosphere, and also to control particulate matter from forest fires that affect the inhabitants of Chiang Mai and other cities. Rural villagers are often accused of damaging the climate, or even arrested. Unfortunately, the Thai satellite passes over the country between 12.00 and 14.00 hours, precisely the time when the local Karen community needs to make sustainable use of biotic fire if it is to avoid dependence on fossil-based agrochemicals.

Needless to say, the satellite does not monitor “hot spots” in the cities, where large amounts of fossil fuels are burned at the same time in an unsustainable way. The result is to disable exactly those communities and practices that hold some of the best hopes for preserving forests and bringing about a genuine “transition.” Since shooting down the satellite is not an option, the community has to work constantly to re-educate potentially sympathetic fractions of the state apparatus about the ecological value of their customary agriculture.

It is notable that members of this Karen community do not routinely use words translatable as “energy” or “energy transition,” but do use words that signify sovereignty. For them, the key to their ecological future is to defend their community's culture and identity, including fire arrangements related to rotational upland rice cultivation and respect for the land, forests, animals and complementary relationships with the local environment and other communities. Nevertheless, Lohmann believes it is important to be open to interpreting these visions as part of an alternative “energy transition” that can be contrasted with Thailand’s official version, which features energy-hungry satellites, digital grids, forest carbon that supposedly “offsets” fossil fuel use, vast solar farms and an extreme urban middle-class bias. In other words, this community's vision could be seen as a Southeast Asian way of re-signifying the “energy transition” that implies a completely different way of looking at energy, carbon dioxide and agriculture alike. As Villa suggests, such concrete examples of grassroots communities are crucial in creating the necessary underpinning or foundation for dialogue and connection between different interest groups.

For the full series, see this link: <https://www.accionecologica.org/wp-content/uploads/PROGRAMA-DIALOGOS-ECOLOGISTAS-web.pdf>.