

Energy Dilemma

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The ecological bifurcation is not a gala dinner. After a summer of extreme climatic events and a new IPCC report confirming its most worrying forecasts, large parts of the world are now roiled by an energy crisis that prefigures further economic troubles down the road. This conjuncture has buried the dream of a harmonious transition to a post-carbon world, bringing the question of capitalism's ecological crisis to the fore. At COP26, the dominant tone is one of powerlessness, where impending miseries have left humanity cornered between the immediate demands of systemic reproduction and the acceleration of climate disorders.

Prima facie, one might think that steps are being taken to address this cataclysm. More than 50 countries – plus the entire European Union – have pledged to meet net zero emissions targets that would see global energy-related CO₂ emissions fall by 40% between now and 2050. Yet a sober reading of the scientific data shows that the green transition is well off track. Falling short of global net zero means that temperatures will continue to rise, pushing the world well above 2°C by 2100. According to the UNEP, nationally determined contributions, which countries were requested to submit in advance of COP26, would reduce 2030 emissions by 7.5%. Yet a 30% drop is needed to limit warming to 2°C, while 55% would be required for 1.5°C.

As a recent *Nature* editorial warned, many of these countries have

made net-zero pledges without a concrete plan to get there. Which gases will be targeted? To what extent does net-zero rely on effective reduction rather than offsetting schemes? The latter have become particularly attractive for rich countries and polluting corporations, since they do not directly diminish emissions and involve transferring the burden of carbon-cutting to low- and medium-income nations (which will be most severely affected by climate breakdown). On these crucial issues, reliable information and transparent commitments are nowhere to be found, jeopardizing the possibility of credible international scientific monitoring. The bottom line: based on the current global climate policies – those implemented and those proposed – the world is on track for a devastating increase in emissions during the next decade.

In spite of this, capitalism has already experienced the first major economic shock related to the transition beyond carbon. The surge in energy prices is due to several factors, including a disorderly rebound from the pandemic, poorly designed energy markets in the UK and EU which exacerbate price volatility, and Russia's willingness to secure its long-term energy incomes. However, at a more structural level, the impact of first efforts made to restrict the use of fossil fuels cannot be overlooked. Due to government limits on coal burning, plus shareholders' growing reluctance to commit to projects that could be largely obsolete in thirty years, investment in fossil fuel has been falling. Although this contraction of the supply is not enough to save the climate, it is still proving too much for capitalist growth.

Putting together several recent events gives a taste of things to come. In the Punjab region of India, severe shortages of coal have caused unscheduled power blackouts. In China, more than half the provincial jurisdictions have imposed strict power-rationing measures. Several companies, including key Apple suppliers, have recently been forced to halt or reduce operations at facilities in Jiangsu province, after local governments restricted the supply of electricity. Those restrictions were an attempt to comply with national emissions targets by restricting coal-fired power

generation, which still accounts for about two thirds of China's electricity. To contain the spillover of these disruptions, Chinese authorities have put a temporary brake on their climate ambitions, ordering 72 coal mines to increase their supply and relaunching imports of Australian coal that were halted for months in the midst of diplomatic tensions between the two countries.

In Europe, it was the surge in gas prices that triggered the current crisis. Haunted by the memory of the *gilets jaunes* uprising against Macron's carbon tax, governments have intervened with energy subsidies for the popular classes. More unexpectedly, though, gas price increases have precipitated chain reactions in the manufacturing sector. The case of fertilizers is telling. A US group, CF Industries, decided to shut down production of its UK fertilizer plants, which had become unprofitable due to price increases. As a by-product of its operations, the firm previously supplied 45% of the UK's food-grade CO₂ – whose loss unleashed weeks of chaos for the industry, affecting various sectors from beer and soft drinks to food packaging and meat. Globally, the surge of gas prices is affecting the farming sector via the increase in fertilizer prices. In Thailand, the cost of fertilizers is on track to double from 2020, raising costs for many rice producers and putting the planting season at risk. If this continues, governments may have to step in to ensure essential food supplies.

The global and widespread repercussions of energy shortages and price increases underscores the complex fallout involved in the structural transformation necessary to eliminate carbon emissions. While a reduction is underway in the supply of hydrocarbon, increases in sustainable energy sources are not sufficient to meet growing demand. This leaves an energy mismatch that could derail the transition altogether. In this context, countries can either return to the most readily available energy source – coal – or cause an economic contraction driven by the surge in costs and their effects on profitability, consumption prices and the stability of the financial system. In the short term, then, there is a trade-off between ecological objectives and the

requirement to foster growth. But does this energy dilemma hold in the medium and long term? Will we ultimately face a choice between climate and growth?

A successful carbon transition implies the harmonious unfolding of two processes complexly related at the material, economic and financial levels. First, a process of disbandment must take place. Sources of carbon must be drastically reduced: above all hydrocarbon extraction, electricity production by coal and gas, fuel-based transport systems, the construction sector (due to the high level of emissions involved in cement and steel production) and the meat industry. What is at stake here is degrowth in the most straightforward sense: equipment must be scrapped, fossil fuel reserves must stay in the soil, intensive cattle-breeding must be abandoned and an array of related professional skills must be made redundant.

All things being equal, the elimination of production capacities implies a contraction of supply which would lead to generalized inflationary pressure. This is even more likely because the sectors most affected are located at the commanding heights of modern economies. Cascading through the other sectors, pressure on costs will dent firms' mark-up, global profits and/or consumer purchasing power, unleashing wild recessionary forces. In addition, degrowth of the carbon economy is a net loss from the point of view of the valorization of financial capital: huge amounts of stranded assets must be wiped out since underlying expected profits are foregone, paving the way for fire sales and ricocheting onto the mass of fictitious capital. These interrelated dynamics will fuel each other, as recessionary forces increase debt defaults while financial crisis freezes the access to credit.

The other side of the transition is a major investment push to accommodate the supply shock caused by the degrowth of the carbon sector. While changing consumption habits could play a role, especially in affluent countries, the creation of new carbon-free production capacities, improvements in efficiency, electrification of transport, industrial and heating systems (along

with the deployment of carbon capture in some instances) are also necessary to compensate for the phasing out of greenhouse gas emissions. From a capitalist perspective, these could represent new profit opportunities, so long as the costs of production are not prohibitive relative to available demand. Attracted by this valorization, green finance could step in and accelerate the transition, propelling a new wave of accumulation capable of sustaining employment and living standards.

Yet it is important to bear in mind that timing is everything: making such adjustments in fifty years is completely different from having to disengage drastically in a decade. And from where we are now, the prospects for a smooth and adequate switch to green energy are slim, to say the least. The scaling back of the carbon sector remains uncertain due to the inherent contingency of political processes and the persistent lack of engagement from state authorities. It is illustrative that one single Senator, Joe Manchin III of west Virginia, can block the US Democrats' programme to facilitate the replacement of coal- and gas-fired power plants.

As illustrated by the current disruptions, the lack of readily available alternatives could also hamper the phasing-out of fossil fuels. According to the IEA: 'Transition-related spending [...] remains far short of what is required to meet rising demand for energy services in a sustainable way. The deficit is visible across all sectors and regions.' In its latest Energy Report, Bloomberg estimates that a growing global economy will require a level of investment in energy supply and infrastructure between \$92 trillion and \$173 trillion over the next thirty years. Annual investment will need to more than double, rising from around \$1.7 trillion per year today, to somewhere between \$3.1 trillion and \$5.8 trillion per year on average. The magnitude of such a macroeconomic adjustment would be unprecedented.

From the perspective of mainstream economics, this adjustment is still a matter of getting the prices right. In a recent report commissioned by French President Emmanuel Macron, two

leading economists in the field, Christian Gollier and Mar Reguant, argue that ‘The value of carbon should be used as a yardstick for all dimensions of public policymaking.’ Although standards and regulations should not be ruled out, ‘well-designed carbon pricing’ via a carbon tax or cap-and trade mechanism must play the leading role. Market mechanisms are expected to internalize the negative externalities of greenhouse gas emissions, allowing for an orderly transition on both the supply and demand sides. ‘Carbon pricing has the advantage of focusing on efficiency in terms of cost per ton of CO₂, without the need to identify in advance which measures will work.’ Reflecting the plasticity of market adjustment, a carbon price – ‘unlike more prescriptive measures’ – opens up a space for ‘innovative solutions’.

This free-market, techno-optimistic perspective ensures that capitalist growth and climate stabilization are reconcilable. However, it suffers from two main shortcomings. The first is the blindness of the carbon-pricing approach to the macroeconomic dynamics involved in the transition effort. A recent report by Jean Pisani Ferry, written for the Peterson Institute for International Economics, plays down the possibility of any smooth adjustment driven by market prices, while also dashing the hopes of a Green New Deal that could lift all boats.

Observing that ‘Procrastination has reduced the chances of engineering an orderly transition’, the report notes that there is ‘no guarantee that the transition to carbon neutrality will be good for growth.’ The process is quite simple: 1) since decarbonation implies an accelerated obsolescence of some part of existing capital stock, supply will be reduced; 2) in the meantime, more investment will be necessary. The burning question then becomes: are there sufficient resources in the economy to allow for more investment alongside weakened supply? The answer depends on the amount of slack in the economy – that is, idle productive capacity and unemployment. But considering the size of the adjustment and the compressed timeframe, this cannot be taken for granted. In Pisani Ferry’s view, ‘Impact on growth will be ambiguous, impact on consumption should be negative. Climate

action is like a military build-up when facing a threat: good for welfare in the long run, but bad for consumer satisfaction’.

Shifting the resources from consumption to investment means that consumers will inevitably bear the cost of the effort.

In spite of his neo-Keynesian perspective, Pisani-Ferry opens up an insightful discussion on the political conditions that would allow for a reduction in living standards and a green class-war fought along income lines. Yet, in its attachment to the price mechanism, his argument shares with the market-adjustment approach an irrational emphasis on the efficiency of CO₂ emission reduction. The second shortcoming of Gollier and Reguant’s contribution becomes apparent when they call for ‘a combination of climate actions with the lowest possible cost per ton of CO₂ equivalent not emitted’. Indeed, as the authors themselves recognize, the setting of carbon prices is highly uncertain. Evaluations can range from \$45 to \$14,300 per ton, depending on the time horizon and the reduction targeted. With such variability, there is no point in trying to optimize the cost of carbon reduction intertemporally. What is important is not the cost of the adjustment, but rather the certainty that the stabilization of the climate will occur.

Delineating the specificities of the Japanese developmental state, the political scientist Chalmers Johnson made a distinction that could also be applied to the transition debate:

A regulatory, or market rational, state concerns itself with the form and procedures – the rules, if you will – of economic competition, but it doesn’t concern itself with substantive matters [...] The developmental state, or plan-rational state, by contrast, has as its dominant feature precisely the setting of such substantive social and economic goals.

In other words, while the first aims at efficiency – by making the most economical uses of resources – the second is concerned with

effectiveness: that is, by the ability to achieve a given goal, be it war or industrialization. Given the existential threat posed by climate change and the fact that there exists a simple and stable metric to limit our exposure, our concern should be with the effectiveness of reducing greenhouse gases rather the efficiency of the effort. Instead of using the price mechanism to let the market decide where the effort should lie, it is infinitely more straightforward to add up targets at the sectoral and geographical levels, and provide a consistent reduction plan to ensure that the overall goal will be achieved in time.

Morgan Stanley's Ruchir Sharma, writing on this question in the FT, raises a point which indirectly makes the case for ecological planning. He notes that the investment push necessary to transition beyond carbon presents us with a trivially material problem: on the one hand, dirty activities – particularly in the sectors of mining or metal production – are rendered unprofitable due to increased regulation or higher carbon prices; on the other hand, investment for the greening of the infrastructure requires such resources to expand capacities. Decreasing supply plus rising demand is therefore a recipe for what he calls 'greenflation'. Sharma therefore argues that 'Blocking new mines and oil rigs will not always be the environmentally and socially responsible move.'

As the spokesperson of an institution with vested interest in polluting commodities, Sharma is hardly a neutral commentator. But the problem he articulates – how to supply enough dirty material to build a clean-energy economy – is a real one, and relates to another issue with the putative market-driven transition: carbon pricing does not allow society to discriminate between spurious uses of carbon – such as sending billionaires into space – and vital uses such as building the infrastructure for a non-carbon economy. In a successful transition, the first would be made impossible, the second as cheap as possible. As such, a unique carbon price becomes a clear pathway to failure.

This brings us back to an old but still decisive argument:

rebuilding an economy – in this case one which phases out fossil fuels – requires restructuring the chain of relations between its diverse segments, which suggests that the fate of the economy as a whole depends on its point of least resistance. As Alexandr Bogdanov noted in the context of building the young Soviet state, ‘Because of these interdependent relationships, the process of enlargement of the economy is subject in its entirety to the law of the weakest point.’ This line of thought was later developed by Wassily Leontief in his contributions to input-output analysis. It holds that market adjustments are simply not up to structural transformation. In such situations, what’s required is a careful and adaptative planning mechanism able to identify and deal with a moving landscape of bottlenecks.

When one considers the economic challenges of restructuring economies to keep carbon emissions in line with the stabilization of the climate, this discussion acquires a new framing.

Effectiveness must take precedence over efficiency in reducing emissions. That means abandoning the fetish of the price mechanism in order to plan how the remaining dirty resources will be used in the service of clean infrastructure. Such planning must have international reach, since the greatest opportunities for energy-supply decarbonation are located in the Global South. Moreover, as transformation on the supply side will not be enough, demand-side transformations will also be essential to stay within planetary boundaries. Energy requirements for providing decent living standards to the global population can be drastically reduced, but in addition to the use of the most efficient available technologies, this implies a radical transformation of consumption patterns, including political procedures to prioritize between competing consumption claims.

With its longstanding concern for planning and socialized consumption, international socialism is an obvious candidate to take on such a historic task. Though the poor state of socialist politics doesn’t conjure much optimism, the catastrophic conjuncture we are entering – along with price volatility and the ongoing spasms of capitalist crises – could increase the fluidity of

the situation. In such circumstances, the left must be flexible enough to seize any political opportunity that will advance the cause of a democratic ecological transition.

Read on: Mike Davis, 'Who Will Build the Ark?', NLR 61.