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Article

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The pandemic has evoked much discussion on the climate. Declarations that climate change will be worse than the fallout from the virus posit that our recoveries prioritise transitions to low-carbon economies powered by renewable energy (RE). This is held to be urgently required to meet the accelerating climate crisis across much of the political spectrum. Welcome as such developments are, the means of achieving such transitions are highly contested – as is the scope and vision of the transformation needed. Despite its hegemony, the private, market-centred approach is failing to deliver sufficient emission reductions. Rather, it is through a public pathway that a transformation of the energy system for the needs of the climate and working people can be delivered. This paper outlines what the transformation could entail, utilising the 'Eskom transformed: achieving a just energy transition for South Africa' report on South Africa's national energy utility (ERRG 2020). This is foregrounded by a thorough interrogation of the current landscape of RE. Alongside this vision for energy transformation, a politics to get us there is described, a politics of and for the working-class.

A just-recovery for a just transition

The Covid-19 pandemic is a global crisis unlike any before it. Even if the pandemic settles into a seasonal virus, the world will not be same. As of November 2020, the *confirmed* death toll has just passed 1.2 million; but understandably, much of the focus is on the indirect fallout. The sheer scale of the devastating socio-economic consequences is unprecedented. Almost every country is in a recession where the overall global contraction is expected to be as much as 7.7 per cent (World Bank 2020:4-5). In the initial months of the pandemic the oil price and stock market crashed and there have been

major price drops for commodities (excluding gold), piling on the pressure for emerging markets and developing economies. The situation is nothing short of a catastrophe in South Africa, where over the past two decades the *narrowly defined* official unemployment was almost always above 25 per cent and recent expanded unemployment – including those who have given up looking for work – has increased to 42 per cent (StatsSA 2020).

The latter is the *real* measure given the longevity of the crisis. But statistics do not adequately describe the suffering working people are facing which includes widespread hunger. Hard lockdowns and the closures of schools dramatically increased the levels of unpaid care and social reproductive work. They further removed a critical source of day-care for working parents and the limited, but essential, relief of a daily school-meal. As primary care-givers, women have been particularly affected and have also faced increased incidents of gender-based violence (Metsing 2020).

The economic crises have naturally brought about proposals for recoveries with climate change as a core component. However, the scale of investment required for a transition towards a low-carbon, and eventual net-zero-carbon global economy, dwarfs the economic fallout of the pandemic. An extraordinary effort is required, and the overarching question now is who will lead it. For now, it is capital, investors and technocrats – through the *state guaranteed* market – that are expected to provide the investment in return for guaranteed profitability. However, there are those who hold that a public pathway is required. As this paper will demonstrate, such a pathway is required to both stand a chance to meet even the most conservative climate targets, and to ensure that the transition is a just one; that leaves no worker behind, reflects the needs of frontline communities, and ensures energy is produced as an essential public good.

The arguments for this position are in part demonstrated through the local example of Eskom, the South Africa national power utility. There is currently a battle for the future of the South African energy sector. The conventional picture is of a decaying, corrupt utility, addicted to coal and holding back a wave of private investment in renewables. To break this impasse, the government intends to 'unbundle' the utility – in line with World Bank thinking and recommendations – into separate generation, transmission, and distribution divisions. This first step is necessary to achieve their vision of *cost recovery* throughout the energy sector; however, a recent assessment of this thinking by the bank itself found widespread failures on its own terms (Foster and Rana 2019). Unbundling is required to prise out Eskom's monopoly

on generation so a private electricity market can be created. This pathway towards privatisation threatens much. The opportunity to reindustrialise on terms that would alleviate mass unemployment and staggering levels of inequality would disappear. As too will the possibility of energy produced for people not profit. It is incumbent on South Africa to play a leading role in meeting global climate targets – unbundling will compromise this. It is imperative to then not simply call for a transformation of the energy sector, but to fight for what kind of transformation it should be.

Transition, what transition?

To meet even the most conservative emission reduction targets, transitions will need to be all encompassing in transforming fossil-fuel dependent economies. That said, there can be no doubt that the immediate priority (with respect to emissions) is transforming the fossil energy sector towards renewable and other forms of clean energy. The energy sector (electricity, heat and transport) accounts for almost 75 per cent of emissions and low-carbon transformations of almost all other sectors will require clean energy (Neale 2014, WRI 2016). Clearly significant advancements in efficiency and reductions in energy use will be required (IRENA 2019), but transforming energy generation remains the base for any transition.

Alongside calls to address the accelerating climate crisis is an increasingly held notion that the challenge has been taken up and is being met worldwide by an insurgent RE sector. The previous two decades have seen global RE production – excluding hydropower[1] – increase almost five-fold (BP 2020). Critical is how cheap RE has *supposedly* become compared to fossil fuels, and a range of headlines announcing that the transition is inevitable have followed. But the significance of this boom is vastly overstated and, given the stakes, this complacency is dangerous and politically debilitating. Renewable energy does account for almost 25 per cent of electricity generation, but 15 per cent of this is hydropower. Further, RE makes up between just 11 per cent and 13.5 per cent of primary energy production – of which between 2.5 per cent and 5 per cent is solar and wind (BP 2020, IEA 2020c). Further, RE's share in the energy mix is not growing at the same rate as its production. The rate of global investment in wind and solar energy has in fact fallen in recent years and in 2018 gross investment fell by 12 per cent, with a recovery of just 3 per cent in 2019 (Frankfurt School-UNEP 2020). This is all pre the pandemic-induced economic crisis.

To ascertain the severity of this slowdown, one must plot it within what

is required for a future scenario that meets emission targets. Such analyses are based on meeting the common goal of the 2015 Paris Agreement; limiting the rise in global temperatures this century to 'well below' 2°C, with 1.5°C the target. The IPCC makes clear that the latter aim is essential in avoiding severe climate breakdown (IPCC 2018); however, the 2°C limit is more than sufficient to demonstrate how far off we are. According to the International Renewable Energy Agency (IRENA), the cumulative investment required until 2030 is $60 trillion, until 2050 – $110 trillion (IRENA 2020). Conservative annual investment targets require more than double the current investment of $282.2 billion; a 134 per cent increase from the current 3 per cent (IRENA 2020). Whatever transition is occurring, it's slowing down and its insufficiency is planet-threatening. Many factors account for the increasingly deficient levels of investment in RE. They include the entrenched interests of fossil capital and expansion of gas; the booming energy needs of Asia (BP 2020); and the relative decline of clean nuclear energy including its decommissioning (BP 2020). While these factors are not insignificant, the failure primarily lies with the current market-led RE investment paradigm. Even with support, the market is not delivering the transition we require in the time we have left.

Most of the world's RE, particularly in Europe, was 'incentivised' by a Feed-in tariff (FiT) system, whereby producers of RE feed electricity into the grid at a guaranteed above market price. The cost of this subsidy has been passed on to the end users – the public. The increases in the retail prices for electricity led to political pushback and in 2013 the EU decided to phase out the FiT system and move to competitive auctions (ERRG 2020:58). This meant that wind and solar firms now had to compete against each other to win new contracts known as 'power purchase agreements' (PPAs). The introduction of the auction system led to falling bid prices, which is one of the main reasons why RE costs have been falling.

This process is part of a three-fall effect; which is explained in greater detail by Sweeney and Treat (2017b) from Trade Unions for Energy Democracy (TUED). As competition between RE firms increases, the bidding price of RE falls; whilst capital expenditure costs fail to fall at the same speed. As a result, profit margins also fall and what follows is a fall in the rate of investment. The slowdown – and even intermittent reduction – of RE investment is explained by the very market conditions that are meant to be our deliverance. Competition remains a core constraint on RE private firms and they cannot be sustained without continuous and significant public support.

As two consultants put it:

> While it's accurate to say renewables have become much cheaper over the last few years and no longer require outright subsidy, the idea of a pure market for electricity is a mix of ignorance and wilful fallacy. Pushing RE to compete with fossil fuels in wholesale electricity market may, in fact, undo much of the progress made over the last decade in developing investment-ready climate policies. (Stukalkina and Donovan 2018)

Despite this, false optimism about the transition is pervasive such as the 2016 IEA's declaration that 2015 was 'the year electric vehicles [EVs] went mainstream' whilst simultaneously citing that EVs reduced oil demand by 0.01 per cent of daily consumption (Sweeney and Treat 2017a:11). Worrying, largely unrecognised are the increasing methane emissions that are significantly more potent in the short-term than CO_2 (Sweeney and Treat 2017a). Recent research has confirmed that methane emissions from fossil fuels are 25-40 per cent higher than earlier estimates and the current decade's average emissions are 9 per cent higher than the previous one (Hmiel et al 2020). Carbon dioxide emissions may have flattened (IEA 2020b), but even Covid-19 disruptions will at best reduce them by just 7 per cent in 2020 (le Quéré et al 2020).

Any pretences to an ongoing transition, never mind an 'inevitable' one, are delusional and in view of the urgency, deeply harmful. Only an unprecedented level of investment can save us, which a private sector reliant on opportunities for profit-maximisation is not delivering. So, if addressing the climate crisis is the primary reason for a transition, we must look elsewhere.

The public sector has long been maligned and debilitated through austerity and corruption. However, researchers from the Alternative Information and Development Centre (AIDC), the Transnational Institute (TNI) and TUED, have outlined the vision for such a public path with Eskom as its beating heart. The case of Eskom offers an encompassing scenario for perhaps the most critical conjuncture of all time.

Eskom transformed

Much of South Africa has been built on the foundation of its mining sector following a brutal model of hyper-extractivism and hyper-exploitation of labour – significantly enabled by colonialism and apartheid. Historically, this has primarily been the extraction of gold and diamonds. However, Eskom has capitalised on vast coal reserves since the early twentieth century. Once revered as the world's 'finest' energy utility, the current company is anything

but. It cannot provide stable electricity, with the country experiencing regular periods of rolling blackouts since 2008. Various historical developments as well as mass corruption have left it some R488 billion in debt (Paton 2020). The largest contributor has been the historical commercialisation of the entity, resulting in its current death spiral – to be addressed in greater detail below. Eskom generates over 91 per cent of its energy from coal (ERRG 2020), and in no small part accounts for the fact that South Africa's economy is one of the most carbon-intensive, with higher per capita emissions than China (Ritchie and Roser 2017).

According to various mainstream analysts and much of the media, this grim situation can be solved through the internally flawed market paradigm above. To facilitate this, proponents call for the opening up of Eskom's generation monopoly to private firms. The government agrees, and are intent on unbundling the utility (DPE 2019). It is *unbundling*, that is at the epicentre of the contestation. The market is only set to enter generation through PPAs. Private players accept that the state as an outside regulator is a necessity. However, it is widely understood that the transmission side of the sector will be anything but profitable. The almost exclusively reported 'levelized cost of energy' is misleading. It ignores the significant capital costs of the substantial transformation of the grid – the 'system costs' to overcome issues of storage and non-dispatchability – for integration and expansion of solar and wind RE at scale (IRENA 2015). Eskom officials estimate that at least R143 billion is required for the next decade to accommodate an energy mix with just over 25 per cent solar and wind (Creamer 2020). All of these costs will fall to Eskom's transmission and distribution divisions and whatever cannot be passed on to end consumers will have to be taken on as further debt.

Eskom's debt is immense. Fittingly, much has been made of the staggering levels of corruption and mismanagement at the utility – most notably at Medupi and Kusile power stations (ERRG 2020:32), yet the role of its commercialisation or *corporatisation* receives little attention. The details are outlined in the Eskom report (EERG 2020:26-27), but essentially Eskom went from a utility premised on the public service of delivering electricity at cost; to one that was required to raise its own capital and meet its own costs – the principle of *full cost recovery*. This is simply impossible in a country with such deep levels of unemployment and poverty. This has not prevented Eskom from hiking tariffs by over 400 per cent in just over a decade (Moolman 2019); and, but for the national regulator, tariffs would be far higher. Municipalities, which rely on the sale of electricity to fund their

services, are major debtors to Eskom and are unable to pay them back (Jooste 2020). That mines, businesses and private households are increasingly installing their own RE adds to Eskom's plight. Its insufficient revenue from supplying either users – including municipalities – who can afford less and less, has to be made up by hiking up the price, resulting in even less bought electricity or users avoiding payment entirely. The implications for access to electricity are miserable and Eskom has even cut off entire municipalities. Reduced revenues also mean less funding for critical maintenance and expansion and rolling black-outs due to power station malfunction look set to continue until at least 2022 (Wright and Calitz 2020). A death spiral indeed.

The process of unbundling and acceleration of the death spiral will almost inevitably result in full-scale privatisation of generation and it is in response to this that the Eskom Research Reference Group produced their report (ERRG 2020). Rather than unbundling the utility and favouring private generation, they argue for a public pathway, maintaining Eskom as a vertically-integrated utility towards 100 per cent RE generation and a real *just* transition that both meets the socio- and climate-justice requirements of South Africa. Rather than subsidising the profits of private generators and incurring their borrowing costs, Eskom can use available and substantial finances available in the surpluses of public investment and pension funds. The report and other work of the AIDC has outlined how these funds can both cover Eskom's debt and finance a wider just transition (AIDC 2020, ERRG 2020:76-81). Complementary, is prosecuting and recovering funds from corrupt actors which is already underway (Nicolson 2020). Detached from its debt burden, as a public utility Eskom would be a low-risk borrower able to deploy the investment we need.

Maintaining vertical integration does not discount the need for a broad transformation of the electricity sector nor sweep away the technical challenges outlined above. The report outlines a range of principles to guide such a transformation including access, transparency and sustainability (ERRG 2020:133-40). Participation is a key principle, referring to increasing the involvement of workers and end-users in decision-making and implementation of services. Workers should have decision-making power on a variety of issues, including welfare, wages and bonuses. Giving them power in the nomination of senior managers can safeguard against nepotism, widely described as 'cadre deployment' in South Africa. Other than reimbursement of actual, essential costs, no board members would be paid for their services.

The transformation centres on energy being provided as an essential good through real public ownership and stands in firm opposition to energy being sold as a commodity where the profits of a few are guaranteed by the public – as all the while climate targets move further out of reach. On the significant challenges on deploying renewables the report notes:

> This is not a reason, as some on the political right have argued, to abandon renewables. Rather, the fact that there is 'no profit in renewables' merely opens the door to social ownership of RE, because a system anchored in social ownership will be liberated from the imperatives of 'satisfactory returns on investment' for private developers and investors. For privately owned RE companies, 'cheap' is bad. For publicly owned renewables, the prospect of abundant clean energy for all becomes an achievable reality. (ERRG 2020:54)

But, while that might solve the investment challenge, it doesn't solve the much larger political one – who's going to deliver this transformation?

Energy politics for the working-class

The struggle for energy to be produced cleanly and as a public good will be monumental. It will have to confront a currently hegemonic 'green growth' sector that increasingly looks to privatise energy generation through the language of sustainability and urgency to stop climate change – despite its current failures in this regard. Conversely, the struggle will have to take on and progressively shut down a private fossil fuel sector that invests less than 1 per cent of its capital expenditure in low-carbon business (IEA 2020a) – although the recent oil collapse might shift this. There is undoubtedly a growing climate justice movement that is increasingly conscious of the role of capitalist political economy and the need for a radical change of course. 'System change, not climate change' is often seen and heard at demonstrations, often led by high-school students. Frontline communities continue their historical struggles against extractivism and for the protection of their local environments. Various social forces are increasingly coming together in their demands, but what seems painfully missing is organised labour. System change yes, but who is going to change the system? There is no getting away from energy workers being needed to transform the energy sector. They are best placed to force concessions from capital through strikes and other forms of disruptive politics at the workplace. But these are workers with legitimate fears of job losses who are often suspicious of environmentalism (Huber 2019). Eskom and supply coal mines have thousands of these workers. The struggle for energy transformation must be

rooted in workers and the politics of it must speak to them.

Matt Huber attempts to develop such a politics in his essay 'Ecological politics for the working class' that aims 'at mobilising the mass of workers to confront the source of the crisis – capital' (Huber 2019). This politics hinges on two core tenets of shifting class responsibility away from workers and individuals towards those actually responsible – fossil capital; and, appealing to the material interests of workers. The climate crisis in particular is centred upon sectors absolutely vital to the lives of working people – energy, but also transport and food. Huber (2019:11) states:

> The goal should be to use this scientifically declared emergency to build a movement to take these critical sectors under public ownership to at once decarbonize and decommodify them.

Transformation of these sectors is appealing as is the potential millions of jobs it could bring to the mass of unemployed people and those workers whose wages are in part depressed as a result of said unemployment (Neale 2014, AIDC 2017). One can expand the sectors mentioned by Huber to housing and sanitation infrastructure which are particularly in the interests of the South African working-class and poor (AIDC 2017). The planet cannot continue under a paradigm of continuous maximisation of economic growth and energy efficiency will be critical to meet climate targets. However, the programmes to meet the climate and ecological crises must be framed as expansions on what people have right now – an abundance of, that includes electricity. 'Austerity ecology', a politics of limits, will not resonate with the overwhelming majority who have so little. Huber further cautions against centring livelihood struggles of frontline communities, often understandably championed by environmentalists. These struggles are important, essential even. But it is the broader programmes, more universal in their appeal, that can bring together the forces – urban and industrial workers – most capable of transforming the energy system and the broader system that produces the injustices frontline communities face. Such a politics and the movements it produces must align and intersect with others be they anti-austerity, fights against corruption, and racial justice; which has produced unprecedented uprisings in the US and elsewhere.

A better world cannot wait

Analyses across the political spectrum tell the story of an, at best, fledging transition in the energy sector. Despite the privatisation of many energy

utilities around the world, the market hasn't delivered and where prices fall initial booms will always recede. The slowdown in investment is despite a scientific requirement – widely, albeit unevenly, acknowledged by the ruling class – for its exponential increase to prevent ecological and economic disasters. Profit cannot be the primary motive for investment, let alone can it ever dictate the workings and distribution of an energy system to satisfy all people's needs. Unprecedented levels of public-led investment are the best way to deliver renewables in time – as well as the expansions and transformation of other key sectors. Such a public role, particularly after a crisis like Covid-19, is hardly unprecedented (Bossie and Mason 2020).

We must consistently confront the cheerleaders of market-solutions and point out that it is the public sector that has in large part delivered what renewables we have, whether through nurturing the growth of private renewables through state subsidies or financing high-risk innovation (Mazzucato 2015, Taylor 2020). We know too that the programmes required, and the politics that can bring them about, are – or can be – appealing to the overwhelming mass of people across the globe. But struggles towards this transformation cannot wait. Already the previous talk of 'recoveries' is being shown to be just talk. A recent report has found that 72 countries in IMF lending arrangements will begin fiscal consolidation in 2021 and expenditure cuts are to be implemented in all programme countries by 2023 (Munevar 2020). The next decade is our last to avoid the worst of climate impacts. The misery inflicted by the pandemic and the mostly pitiful social relief offered must be channelled towards demands for something better. The promises of a transformed public energy sector can be a cornerstone.

Note

1. Hydropower is renewable clean power; however, a distinction is important in that hydropower's current capacity was installed decades ago and its potential for further expansion is far more constrained. It is also subject to inpendent shifts in precipitation as the climate crisis deepens and is thus often not a suitable future energy source, particularly for water-scarce regions such as South[ern] Africa.

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Addendum:

Reviewer comment

… an excellent piece but … it sits out of synch with the others in … that it really does not draw on the Covid-19 pandemic as a conjunctural moment… I then went back to your directions brief and noted that it fits if that is read with some laxity. The piece could, for example, have focused to some extent on the impact of the lockdown on the consumption of energy (and everything else) and then some reflection on long-term trends on consumption.

Only rather tangentially connected to Covid-19 pandemic in SA.

Authors response

One of the loudest and most persistent responses to Covid-19 is that we can't possibly return to the status quo ante. Above all, Covid-19 seems to have made people aware of the enormity of the inequality that has hitherto gone unnoticed. We've used this new public sensitivity to inequality as an ideal opportunity to talk about the largescale energy poverty in South Africa in 2020. In a South Africa that is not only the most developed country in Africa but also one blessed with an abundance of potential wind and solar energy in a time of the global climate emergency. Against these positives is the reality of several millions of us who are still without electricity and a further – and probably even larger number – who can't afford the electricity to which they have nominal access. And all this is compounded by an economy beset by load-shedding because Eskom can't meet even the reduced demand of an economy in recession.

The Covid-19 pandemic – that coincides with the climate crisis – is thus a perfect conjunctural moment that makes for a more open assessment of the many radical departures outlined in the *Eskom Transformed* report. The viability of these departures and proposals is another matter. Our hope remains that Covid-19 provides the shock, the impetus, to inspire a comradely debate on – including, if necessary, a comradely critique of – the challenging propositions and findings of Eskom Transformed.