



TUED SOUTH **FRAMING DOCUMENT** **DRAFT 2**

UPDATED DECEMBER 2022



Building on previous TUED Working Papers, the goal of this document was to bring to Nairobi an analysis and a series of broad proposals and considerations that might inform a public pathway alternative to the current neoliberal approach to energy transition and climate protection.

The proposed approach is anchored in the extension of public ownership of key sectors, particularly energy, accompanied by the implementation of a new public goods mandate for reclaimed energy companies.

Over time, it must be able to offer plausible solutions to the special challenges facing the Global South, among them energy poverty in the least developed countries, rising levels of fossil fuel extraction and use, as well as rapidly rising emissions from high-growth economies such as China and India.

Towards a Public Pathway Approach to a Just Energy Transition for the Global South.

TUED South “Framing Document”— Draft #2 – Updated December 2022

****Glossary of terms found at the end of the document****

This TUED Working Paper was written to inform discussion at the launch of “TUED South” meeting that took place in Nairobi, Kenya, during October 11th-13th, 2022.¹ In the weeks following the meeting, it was revised to reflect the discussions that took place.

The Nairobi meeting occurred at a time of geopolitical turbulence due to the war in the Ukraine. In many countries, energy has become front page news as prices rise and the major economies rush to secure new sources of gas, coal, and oil. Energy-related anxieties have been accompanied by growing concerns about climate change. The year 2022 produced several headline-making extreme weather events, with devastating floods in Pakistan and in South Africa’s KwaZulu-Natal province together claiming the lives of more than 2,000 people and leaving hundreds of thousands of poor people homeless. Europe’s record-breaking heatwave and wildfires killed 16,000 people, and China’s summer produced a heatwave more severe than any in recorded history.²

Today it is widely recognized that the impact of climate change on the poorest countries is already more severe than it is for the richer countries, and that inadequate public services are contributing to its many damaging effects.³ In 2019 the UN’s Special Rapporteur on extreme poverty and human rights noted “hundreds of millions will face food insecurity, forced migration, disease, and death.”⁴ Climate change is a huge threat to jobs, livelihoods, and security to workers everywhere. But it is the working class and poor people of the South who will be hit the first and the hardest.

¹ Unions from Argentina, Benin, Brazil, Democratic Republic of Congo, Gabon, Ghana, Indonesia, Kenya, Mozambique, Niger, Nigeria, the Philippines, Senegal, Sierra Leone, South Africa, South Korea, Tanzania, Togo, Trinidad and Tobago, Uganda, will attend. Unions from the UK, France and Australia will attend the Nairobi meeting.

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<https://yaleclimateconnections.org/2022/09/hottest-summer-on-record-for-europe-and-china-during-northern-hemispheres-2nd-hottest-summer/>; http://www.cma.gov.cn/en2014/news/News/202208/t20220821_5045788.html

³ According to the IPCC’s Sixth Assessment Report, 2022: “Global hotspots of high human vulnerability are found particularly in West-, Central- and East Africa, South Asia, Central and South America, Small Island Developing States and the Arctic.” Furthermore, “vulnerability is higher in locations with poverty, governance challenges and limited access to basic services and resources... Between 2010-2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability.” See: <https://www.ipcc.ch/assessment-report/ar6/>

⁴ Special Rapporteur on extreme poverty and human rights (2019). Climate change and poverty. Report A/HRC/41/39. Human Rights Council Forty-first session. 25 June.

https://srpovertyorg.files.wordpress.com/2019/06/unsr-poverty-climate-change-a_hrc_41_39.pdf

United Nations Secretary-General António Guterres recently reminded us that the climate emergency is “is not fiction or exaggeration. It is what science tells us will result from our current energy policies.”⁵ He and others have warned that, if global energy use increases in line with past trends, and new energy demand continues to be met primarily by fossil fuels, then by year 2100 the world will be warmer by at least 3 degrees Celsius. The scientific community believes that this could create a situation where, several decades from now, today’s disasters may begin to look like minor incidents when compared to the destruction and turmoil of a 3-degree Celsius world.⁶

Why “South”? Clarifying Terminology, Acknowledging Differences and Variations

Before we proceed, it is important to explain what is meant by “South.” The word is used here for convenience, and often loosely throughout this document. Its use is not intended to homogenize the countries of the South, or to use the term in a way that suggests a common political entity with a common interest.

In fact, the paper attempts to draw attention to important differences that exist across the South in terms of levels of economic development, the production and consumption of energy, and how these differences are expressing themselves politically. Where necessary, distinctions are made that attempt to reflect those differences.

Designations like “developing” or “developed” countries are inherently problematical, and shift over time. Korea is today regarded by the UN as a developed country, whereas before June 2021 it was considered to be a developing country.⁷ Based on World Bank and UN criteria, China is still considered a developing country even though it is the world’s second largest economy. In 2019, 373 million people in China still live below the World Bank’s upper-middle-income poverty line of US\$5.50 per day.

One measure of the distinction between developed and developing countries is greenhouse gas emissions *per capita*. In 2018, of the 20 countries with the lowest per capita emissions, 19 were in Sub-Saharan Africa (with Afghanistan being the one exception) and all 20 recorded emissions of less than a quarter of a ton of CO₂ per person annually, and sometimes significantly lower.⁸ In the more developed Asian economies, per capita emissions have risen to a point where they now equal to some of the developed countries. China’s annual per capita emissions reached roughly 7 tons in 2021, and the same is true of Malaysia, roughly the same as Greece or Portugal [check].⁹

⁵ <https://www.un.org/press/en/2022/sgsm21228.doc.htm>

⁶ IPCC, Press Release, August 9th, 2021.

https://www.ipcc.ch/site/assets/uploads/2021/08/IPCC_WGI-AR6-Press-Release_en.pdf. IEA (2019), World Energy Outlook 2019

⁷ https://www.koreatimes.co.kr/www/nation/2021/07/113_311548.html

⁸ https://www.theglobaleconomy.com/rankings/Carbon_dioxide_emissions_per_capita/OECD/

⁹ IEA Special Report, Financing Clean Energy Transitions in Emerging and Developing Economies (EMDEs) t

Elsewhere in Asia, the per capita emissions of Pakistan, Nepal and Bangladesh are currently less than one ton of CO₂ annually, and just under 2 tons in the case of India.¹⁰ According to the Annual Review of Environment and Resources (2021) “The average per capita emissions in the so-called least developed countries (LDCs) have been 10 times lower than in other developing countries.”¹¹ These numbers, the authors note, “expose the highly unequitable nature of climate change, not least since LDCs are among those already suffering the worst consequences of a rapidly changing climate.”¹²

Why TUED South?

The main organisational goal of the meeting in Nairobi was to establish TUED South as a platform for trade union cooperation on issues of energy transition, climate protection, and sustainability. Such a platform does not currently exist, and its absence is reflected in the generally low level of discussion and debate across the trade union movement on energy transition, climate change, and the future of the global political economy.

The Nairobi meeting generally agreed that where there should be a strong trade union and working-class perspective informed by solid research and rigorous analysis, there is often a lack of depth and detail. Unions in the North have some policy capacity and have been able to be more visible in energy and climate debates. But many North-based trade unions often find themselves left on the side-lines or playing catch up. Hoping for the best (but often fearing the worst), we call for a “just transition” for workers, but we often have little to contribute to the broader debates on energy transition.

This lack of capacity is particularly acute in the case of South-based trade unions, where there are limited resources and the need to respond to urgent day-to-day challenges in often hostile and repressive political environments. This means that, on issues related to energy transition, new projects that involve mining and drilling, the economic dependence on fossil fuel extraction, etc., unions often find themselves severely constrained. TUED South will not solve this problem, but it could help facilitate a level of cooperation and sharing between unions that would not otherwise exist, and thus help unions identify common concerns and develop programmatic commitments that speak to the realities of the South.

¹⁰ https://www.theglobaleconomy.com/rankings/Carbon_dioxide_emissions_per_capita/Asia/

¹¹ Annual Review of Environment and Resources (2021), Vol. 46:653-689 (Volume publication date October 2021) First published as a Review in Advance on June 29, 2021 <https://doi.org/10.1146/annurev-environ-012220-011104> See also: Kartha S, Kemp-Benedict E, Ghosh E, Nazareth A, Gore T. 2020. The carbon inequality era: an assessment of the global distribution of consumption emissions among individuals from 1990 to 2015 and beyond.

¹² Annual Review of Environment and Resources, [environ.annualreviews.org](https://www.annualreviews.org) <https://doi.org/10.1146/annurev-environ-012220-011104>. See also: Kartha S, Kemp-Benedict E, Ghosh E, Nazareth A, Gore T. 2020. The carbon inequality era: an assessment of the global distribution of consumption emissions among individuals from 1990 to 2015 and beyond. [Rep., Stockh. Environ. Inst., Oxfam Int., Stockh., Oxford](#)

It was felt that TUED South can also play a role shaping a new discourse between representatives of other social movements and progressive NGOs and help address political and policy-related weaknesses that currently impair the broader left discourse on energy transition. It is well known that the North is responsible for most of the anthropomorphic CO₂ that has been emitted historically, but it is also true that the South is the world's leading source of both new CO₂ emissions and fossil fuel extraction. As the IEA notes, "Today's development pathway for emerging and developing economies points to higher emissions. Emerging and developing economies are set to account for the bulk of emissions growth in the coming decades unless much stronger action is taken to transform their energy systems."¹³

The per capita emissions of so-called emerging and developing economies (EMDEs) continue to be far lower than those of the North, but they are drawing closer together.¹⁴ It is also true that today the extraction of fossil fuels mostly takes place in the South, and more than half of global conventional oil and gas reserves are in Asia, as is 38% of the world's available coal.¹⁵

When viewed against this background, the suggestion from some environmental and climate justice groups that we merely need to "keep the oil in the soil" and the "coal in the hole" and replace fossil-based energy with renewable energy is clearly not viable. This thinking often assumes that modern renewable energy—principally wind, solar and battery storage—is, or soon will be, able to provide an adequate alternative to fossil fuels that are currently used in the power sector, industry, transport, building and construction, food and agriculture, and other economic sectors. This is not the case—and the responsibility for the absence of a viable alternative lies with the advocates of neoliberal policies that have undermined public companies and public goods approaches to energy technologies, management, and planning.

This is not to say that carbon intensive economic development should today go unchallenged, but how can this be done? Struggles waged by communities against extraction and displacement will continue, and these struggles deserve trade union support. But opposing fossil fuel extraction on a country-by-country or even project-by-project basis will not alter the general course of events, even if a few victories are won along the way. The situation demands a policy framework that is built around public control and ownership of energy, one that can consolidate cooperation and planning, reinforced by multilateral institutions operating under a public goods mandate.

¹³ IEA Special Report, Financing Clean Energy Transitions in Emerging and Developing Economies (EMDEs) | [Special Report](#)

¹⁴ Based on existing policies, emissions from EMDEs are projected to grow by 5 gigatonnes (Gt) over the next two decades. In contrast, they are projected to fall by 2 Gt in advanced economies. See: IEA Special Report, Financing Clean Energy Transitions in Emerging and Developing Economies (EMDEs) | [Special Report](#)

¹⁵ See Asia Infrastructure Investment Bank [2017 data]

In 2009 economist Wolfgang Sachs wrote of the economic growth model that had been embraced by the South: “The exit from poverty and powerlessness leads straight into overuse and overexploitation.”¹⁶ In the years since, this has been shown to be true.¹⁷ The task of unions is to be part of the effort to show that another development pathway is possible, one that can address poverty and powerlessness in ways that can simultaneously prevent overuse and exploitation.

Re-Centering Class

Trade union efforts to develop a *public pathway* alternative will help reestablish a class dimension to the debates on energy transition, climate protection, and the wider ecological crisis. Along with many others, TUED unions insist that these are class issues, because working class and poor people are on the front lines in terms of feeling the economic and social impacts of environmental deterioration. But a class approach is also essential in shaping potential solutions to civilizational crises, solutions that can draw on many decades of practical and policy-related experience.

TUED South can make visible class divisions and rising levels of inequality, realities that get hidden in data on per capita emissions and other comparisons between rich and poor countries. According to a recent Oxfam study, the consumption patterns of wealthiest 10 percent of the world’s population account for 49 per cent of the world’s emissions since 1990, with the US and the EU together making up half of that 49 percent, or roughly 25 percent of global emissions. However, the richest 10 per cent in China and India accounted for almost 10 per cent of global emissions in 2015, and this has probably increased in the ensuing years (2015-2022).¹⁸ In other words, the lifestyles and consumption patterns of the rich of the South are drawing closer to the rich of the North.

This helps put into perspective the idea that energy-intensive economic growth is needed to eradicate poverty, which remains central to the narrative of some South governments. However, the political utility of poverty eradication as justification for economic development has diminished over the course of the last two or three decades. Today China, India and other major developing countries are champions of trade-led growth and aspire to be economic superpowers that can rival the US, the EU, Japan, and others in the more advanced capitalist world. Today, most of electricity generated in the major developing countries is for industrial and commercial purposes. India’s domestic use accounts for just 26% of total energy

¹⁶ Eija Palosuo (ed), *Rethinking Development in a Carbon-Constrained World: Development Cooperation and Climate Change*, Ministry of Foreign Affairs, Finland, 2009, ISBN 978-951-724-742-9

¹⁷ Peter Newell, *Fit for Purpose: Towards a Development Architecture that Can Deliver*. In Eija Palosuo (ed), *Rethinking Development in a Carbon-Constrained World: Development Cooperation and Climate Change*, Ministry of Foreign Affairs, Finland, 2009, ISBN 978-951-724-742-9 “Energy is clearly pivotal to development. Yet meeting the development needs of the majority of the world’s people in a carbon-constrained world presents a global challenge of staggering proportions.”

¹⁸ T. Gore. (2020). *Confronting Carbon Inequality: Putting climate justice at the heart of the COVID-19 recovery*. Oxfam. <https://policy-practice.oxfam.org/resources/confronting-carbon-inequality-putting-climate-justice-at-the-heart-of-the-covid-621052/>

consumption, whereas industrial and commercial use in almost 50%.¹⁹ China's household electricity consumption has grown sixfold since year 2000, but residential use still accounts for just 13% of final energy consumption, while industry accounted for 59%.²⁰ In Korea, 57% of electricity sold by the national utility (KEPCO) is for industry and only 14% for household use.²¹ Today the narrative of choice of key developing countries is “green growth” or “green development”—an issue that is explored in more detail below.

While continuing to be mindful of the historical discrepancies between North and South due to many decades of territorial and economic colonialism, TUED South can provide a platform where unions can address the challenges posed by current realities. As we will see, there are no easy answers, but the search for answers must nevertheless be pursued with urgency and determination.

Neoliberal Failure and the TUED Analysis

Given this need for a viable alternative to carbon-intensive development, the main political goal of the Nairobi meeting was to lay the foundations for a multi-year effort to develop a distinct South-focused trade union analysis that can inform trade union debates, policies, and programmatic commitments on energy and climate-related issues within a framework of social and economic justice and international solidarity.

Mentioned above, UN Secretary Guterres' emphasis on the connection between current energy policies, emissions levels and climate change draws attention to the centrality of energy to any alternative development model. From the outset in late 2012, the unions that formed TUED—many of whom were from the South—warned of the dangers of neoliberal energy and climate policy (discussed in more detail below) and the so-called “green growth” framework. In the ensuing years, TUED unions proceeded to develop an alternative analysis, one that has been built around three main assertions. These are:

1. What the world is witnessing is not an energy *transition* but an energy *expansion*, marked by rising levels of fossil fuel use.
2. The “green growth” neoliberal approach to climate protection and energy transition has been both socially regressive and ecologically ineffective. Greenhouse gas emissions (GHGs) are at record levels.

¹⁹ <https://www.statista.com/statistics/1130112/india-electricity-consumption-share-by-sector/>

²⁰ <https://www.statista.com/statistics/597852/household-consumption-of-electricity-per-capita-in-china/>
<https://www.enerdata.net/publications/daily-energy-news/china-unveils-plan-industrial-sector-reach-peak-emissions-2030.html>; <https://chinapower.csis.org/energy-footprint/>

²¹ Public Policy Institute for People/Network for Energy Labor and Society the Necessity of Public Planning and Reorganization for Energy Transition [KPTU: 2019]

3. An alternative *public pathway* approach is urgently needed, one that is anchored in the extension of public ownership of key sectors, particularly energy, accompanied by the implementation of a new public goods mandate for reclaimed energy companies.

The Significance of *Trade Union Program for a Public, Low Carbon, Energy Future*

An important precursor to the launch of TUED South in Nairobi was the development of the *Trade Union Program for a Public, Low Carbon, Energy Future* that was launched at COP26 in Glasgow November 2021.²² The program proposes a template for a *public pathway* approach to energy transition that points to the need to repeal the neoliberal reforms of the 1980s and 1990, reclaim and reconstitute energy companies, and impose a new mandate based on the provision of energy as a public good.

The program is the result of a collective effort that involved the formation, in early 2021, of a *Trade Union Task Force for a Public Energy Future*. The Task Force consisted of unions from the South and North, and the discussions and written inputs contributed to the drafting of a major report that attempted to show how energy systems can be changed in order to be compatible with the idea of a just energy transition and equipped to make real progress towards meeting climate goals. The report takes an in-depth look at the potential role of utilities in driving the transition and advancing an economy-wide decarbonization. In order to play this critically important role, those same utilities be reclaimed to full public ownership and issued with a new pro-public mandate.²³

Many areas of the Task Force report are applicable to the South and therefore overlap with the issues discussed below. However, this paper moves into territory that the Task Force report was unable to explore, principal among them being:

1. Persistent energy poverty in the least developed countries and how a public pathway approach might deal with the enormous challenge of “clean” electrification.
2. In the more developed parts of the South, expanding levels of both extraction and energy use, which are the two expressions of the *energy expansion*. These two expressions mutually reinforce each other. A public pathway approach must somehow offer plausible ways to impede the energy expansion while progressively decarbonising energy supply.

Aware of these challenges, we can begin to consider the prospects for a *public pathway* approach to energy transition and its part in imagining a new development model. Looking

²² Trade Union Program for a Public, Low-Carbon Energy Future
<https://docs.google.com/document/d/1cNoOqfAsmFTYlt-dmVbsbiK0oiWY5kk0WJk2cXA8J0Q/edit>

²³ Report of the Trade Union Task Force for a Public Energy Future, forthcoming, 2023

ahead, we can consider how unions in both the South and the North can work with allies in the various social movements to promote a “global public goods” agenda at the international level.

The Crucial Role of the Power Sector

Whether North or South, what is key to a *public pathway* approach to energy transition and climate protection is the need for public ownership and control over energy. This document focuses on the power sector, for three main reasons:

1. The generation of electricity is the largest single contributor to CO2 emissions. From a climate perspective, decarbonisation of electricity supply is top priority, because any serious effort to drive an economy-wide transition to a low carbon and truly sustainable future will depend on changes in *how* electricity is produced. In the South, electricity demand and use are growing rapidly. The last decade has seen electricity consumption grow by 37% globally—but it was mostly met by fossil fuels (roughly 75%).²⁴
2. Any attempt to decarbonize transport, heating and cooling, industrial processes, etc. must, we are told, involve generating a lot *more* electricity. This poses several major challenges that have yet to be resolved. In the global North, economy-wide decarbonisation is proceeding quite slowly. But in the South (excluding China) it has barely started.²⁵ Potentially effective technologies are not being developed fast enough or they are not being developed at all.²⁶ Energy efficiency improvements are proceeding far too slowly, especially in the South.²⁷
3. Hundreds of millions of people in the South lack any access to electricity, and many more lack clean energy for cooking and heating. But how can the lack of electricity be addressed? A public pathway approach must take on the task of addressing energy poverty in ways that are consistent with economy-wide decarbonisation.

Background: Resisting the “Private Pathway” and the Role of TUED

²⁴ Globally, electricity’s share of Total Final Energy Consumption is growing. It is the fastest-growing energy end use, as electricity consumption has doubled over the last 23 years, with a 37 percent increase in the last decade.

²⁵ For example, the sale of electric vehicles (excluding trucks) hit 10% of global light vehicle sales. China accounted for the largest increase. Together, China and Europe accounted for more than 85% of global electric car sales in 2021, followed by the United States (10%) <https://www.iea.org/reports/global-ev-outlook-2022>

²⁶ According to CEPS, “Technology deployment and innovation diffusion will thus necessitate investment on a very large scale. Companies, however, will only invest if there is a reasonable expectation of a profitable market. For low/zero-carbon industrial products that compete with currently available carbon-intensive alternatives, the question is: who will buy these products?” CEPS Policy Insight 2017/44 *Transforming Energy-Intensive Industries: Reflections on innovation, investment and finance challenges*.

²⁷ See: IEA, “Recommendations of the Global Commission for Urgent Action on Energy Efficiency,” June 2020, <https://www.iea.org/reports/recommendations-of-the-global-commission-for-urgent-action-on-energy-efficiency>, p. 12. According to the IEA’s Sustainable Development Scenario (SDS), energy efficiency will deliver more than one-third of the total greenhouse gas emission reductions up to 2050.

TUED was formed in October 2012 to begin to develop an independent trade union approach to addressing the threat of climate change and the need for a just energy transition. At the Global Trade Union Assembly that was convened in Rio de Janeiro in June 2012 to coincide with the “Rio+20” conference convened by UN, unions from the South were vocal in their opposition to the neoliberal “green growth” framework that had, one month earlier, been launched by the World Bank in a major report titled *Inclusive Green Growth: The Pathway to Sustainable Development*.²⁸

Consistent with neoliberal thinking, *Inclusive Green Growth* called for governments to introduce “policies that unleash the power of the private sector” by creating an “enabling environment” for private investors.²⁹ These “private pathway” policies were “about addressing market failures and ‘getting the price right’ by introducing environmental taxation, pricing environmental externalities (such as carbon pricing), creating tradable property rights, and reducing inappropriate subsidies.” Such measures, claimed the report, were “critical for enabling the private sector to undertake needed investments and innovations.” Governments, said the Bank, should introduce “well-designed public finance mechanisms help to mobilize private investments in energy efficiency and renewable energy.”³⁰ Without once mentioning the word “privatization,” what the Bank was proposing was all about privatization, the rolling back of public energy systems and the weakening of state control over energy prices and markets. And all of this was to be done in the name of “sustainable development,” and “climate protection.”

While a significant milestone, *Inclusive Green Growth* was, in 2012, the latest in a stream of documents that attempted to reinforce neoliberal assumptions about the “leading role” of the private sector and the “enabling role” of governments (enabling, that is, the private sector to play the leading role that had been assigned to it by neoliberal policymakers). These documents were designed to shape policy decisions on climate and energy transition at all levels of government. Equally significant in this respect was the 2006 paper known as *The Stern Review: The Economics of Climate Change*.³¹ Authored by former World Bank chief economist Sir Nicholas Stern, the *Review* offered a detailed exposition of the “green growth” approach. Governments, the *Review* suggested, should enable private sector investment using mechanisms like subsidies, incentives, and carbon pricing schemes.³²

²⁸ World Bank, *Inclusive Green Growth: The Pathway to Sustainable Development*, May 2012
<https://openknowledge.worldbank.org/handle/10986/6058>

²⁹ World Bank, page 19, <https://openknowledge.worldbank.org/handle/10986/6058>

³⁰ <https://openknowledge.worldbank.org/handle/10986/6058>, Page 22

³¹ Stern, N., 2006. *Stern Review on the Economics of Climate Change*.

http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_ind ex.cfm.

³² A thorough re-telling of this policy history is beyond the scope of this paper. For a deeper examination of this history see TUED Working Paper 10, *Preparing a Public Pathway: Confronting the Investment Crisis in Renewable Energy*, November 2017, <https://www.unionsforenergydemocracy.org/working-papers/preparing-a-public-pathway>. See also: TUED Working Paper 11, *Unions and Just Transition: The Search for a Transformative Politics*, January 2018. <https://www.unionsforenergydemocracy.org/working-papers/trade-unions-and-just-transition-the-search-for-a-transformative-politics>

Importantly, while North-based governments, think tanks and some large environmental NGOs locked arms in support of “green growth”, governments of some of the fast-growing economies of the South were also going along with both the narrative and the pro-market policies that underpinned it. The support for “green growth” from the South is discussed in more detail later in this document.

Meanwhile, the trade union opposition expressed at the “Rio+20” conference made visible a number of major concerns, among them the rise of levels of pollution; repression of peasant and indigenous activists protesting land grabs of various kinds; the undermining of public services, the incursions of extractive multinational companies, and so on. Overall, “green growth” was greeted with deep scepticism and unions from Latin America called for the international trade union movement to organise around a “new discourse.”

Immediately following Rio+20, unions seeking to develop an alternative to the “green growth” model met in New York in October 2012, and TUED was formed. The original TUED document *Resist, Reclaim, Restructure: Unions and the Struggle for Energy Democracy* that was discussed at the meeting marked an early attempt to provide a clear analysis around which to develop an independent, class-based response to the neoliberals’ “privatise to decarbonise” agenda.³³

In the ensuing years, TUED’s papers and accompanying statements pointed to the fact that “green growth” (and the emphasis on “green jobs”) provided political cover for more privatisation and further attacks on public goods and services. Green growth also cultivated the erroneous idea that the energy transition was being driven by market forces. During the period leading to the adoption of the Paris Agreement in late 2015, it was not uncommon for the leading spokespersons of green growth to declare that the transition to a low carbon future was “inevitable” or “well under way.”

Believing this to be true, beginning in the mid- and late-2000s, many unions supported green growth and promoted a narrow agenda built around green jobs, just transition, and the need for “decent work.” The widely used formulation “no worker must be left behind” reinforced the idea that the transition was moving forward; market-focused policies were working (or could not be challenged) and unions should mainly concern themselves with making sure that the transition was “just” and that governments and employers should allow unions a “seat at the table.”³⁴ As Paul Hampton notes, trade union bodies echoed neoliberal demands for a carbon price “to make renewable energy, green buildings and retrofits competitive.”³⁵

³³ TUED “framing document,” for October 2012 launch of TUED, *Resist, Reclaim, Restructure: Unions and the Struggle for Energy Democracy*, <https://www.unionsforenergydemocracy.org/working-papers/resist-reclaim-restructure-unions-and-the-struggle-for-energy-democracy>

³⁴ As the ITUC stated in its “Topline Demands” to the COP21 in Paris, “The clean energy transition is underway. It is now up to governments to speed up the transition so that we stay within safe grounds when it comes to climate change and to make it fair.” See: <https://www.ituc-csi.org/trade-unions-topline-demands-for..>

³⁵ ITUC, *Climate Change is a Trade Union Issue*, 2014

One of the consequences of this narrow “safety net” interpretation was the co-optation of just transition by business interests and government leaders who, while they were willing to publicly acknowledge the anxieties of workers in carbon-intensive sectors who feared losing their jobs, were decidedly unwilling to discuss the fact that neoliberal climate and energy transition policies had been at this point been shown to be ineffective in terms of controlling emissions levels. Thus the shortcomings in terms of securing a just transition for workers in, for example, coal mining or coal-fired power stations, became the primary focus of trade union attention. While serious, these worker-centred policy shortcomings are miniscule in terms of their lasting significance when viewed alongside the much greater failure, namely the growth of emissions and the incapacity of “market mechanisms” to address their upward trajectory.

Since 2012, TUED has set its sights on building support for a “programmatic shift” at the level of the international trade union movement towards a clear commitment to defend and extend public ownership of energy and to advocate for a *public pathway* approach to energy transition and climate protection. TUED’s critique of neoliberal climate and energy policy has stood the test of time, but much more needs to be done in terms of developing the *public pathway* alternative. This need is particularly pressing in the light of the special challenges of the South regarding persistent energy poverty, rising levels of fossil fuel extraction, and ever higher levels of demand for all forms of energy.

Why the *Public Pathway* is a Realistic Alternative

To be fully effective, the *public pathway* approach must be accompanied by radical reforms in global governance. Because there can be no “decarbonization in one country,” it will be necessary for countries and regions that adopt a *public pathway* approach to promote it as framework for energy transition at the global level.

Such a global shift in energy and climate policy is not as quixotic or unattainable as it might first appear. Major shifts in policy have occurred in the past, and they have quickly become global. Developed by the World Bank, the neoliberal energy reform package, known as the “standard model,” was nowhere to be seen in the mid-to-late 1970s, in part because public energy systems had been very successful both in the Global North and in many parts of the South. By the mid-1980s “energy reform” was part of a policy contagion that pushed privatization, marketisation, liberalization, and the promotion of independent power producers (IPPs) in every continent. But as we will see, beyond a handful of countries (Chile, the Philippines, etc.) the neoliberal reforms were not fully implemented, and in many countries state owned enterprises (SOEs) continued to play a major and often preponderant role in the power sector and in the energy sector more broadly.

Similarly, from the mid-2000s, the promotion of renewable energy by way of Feed-in Tariffs became the policy of choice (inspired by Germany’s *Energiewende*) in the OECD countries and it quickly spread to developing countries, only to be abandoned within 10-12 years, first in the UK, then the EU, then almost everywhere else (most recently in China). Next came capacity auctions and power purchase agreements (PPAs) which for the past decade have been in vogue, but this

system is now also in trouble due to lack of financing and “market risk”—the same risk that neoliberals once called “competitive efficiency” but now regard as a major deterrent to private investors.

Lastly, policies designed to “disrupt” public and/or regulated power systems were once considered a crucial prerequisite that could drive the transition away from fossil fuels; today disruption is being questioned by the same policymakers that advocated for it in the first place.

Not for the first time, unshakable confidence has been replaced by deep uncertainty. Efforts are currently being made to reconcile the need to reach climate targets by “mobilizing” and “catalyzing” private capital, but the failures continue to pile up. Politically, neoliberal climate and energy policy is on borrowed time, and if an alternative is not developed, then many national governments may soon walk away from their Paris commitments altogether.

Part One of this document will examine the main tenets and performance of neoliberal climate and energy policy as they pertain to the South. It is divided into three sections.

In **Part Two**, we will show how a *public pathway* approach anchored in public ownership of energy offers policy options that might begin to address the two main challenges identified in Part One, namely *energy stagnation* in the poorer countries of the South, and *energy expansion* in the high-growth developing economies such as China and India.

Part One: Neoliberal Climate and Energy Policy and its Impact on the South

As noted above, the TUED analysis has been built around three main assertions. These are: what we are witnessing today is not an energy *transition* but an energy *expansion*; the “green growth” neoliberal approach to climate protection and energy transition has been ineffective, and an alternative “public pathway” approach is urgently needed. As we will see, the experience of the South corroborates these assertions in ways that are perhaps even more resounding than is the case with the North.

Part One of this document will examine the main tenets and performance of neoliberal climate and energy policy as they pertain to the South. It is divided into three sections.

The first section will attempt to explain what we mean by neoliberal climate and energy policy and its role in shaping the global policy discourse on energy and climate and the respective roles of the North and South in efforts to transition away from fossil fuels. At the level of the UNFCCC, these roles were first articulated through the principle of “Common but Differentiated Responsibilities and Respective Capabilities” (CBDR-RC) which exempted countries of the South from reducing emissions so that they could develop economically.

For TUED South, understanding the history of climate politics is important because the UNFCCC was adopted at the highpoint of neoliberal dominance (the early 1990s) not long after the

collapse of the Soviet Union and the announcement by China that it was moving towards “socialist market economy.” This historical background helps explain why “market mechanisms” became central to the neoliberal approach to climate change and the need to transition away from fossil fuels. This approach was ideologically motivated and never likely to be effective. Today its failure is consciously concealed by corporate and financial interests that benefit from the current policies, but the facts are indisputable.

The second section of Part One will interrogate the record of green growth and its theoretical underpinnings. Almost thirty years have passed since the first global climate agreement, the Kyoto Protocol, was negotiated. During this period emissions have risen by 60%. Today, more than 50% of annual emissions are generated by the developing world. However, the number of people in extreme poverty has been reduced by roughly half, and people without electricity has, since 1990, fallen by roughly 50%. The vast majority of people that acquired electricity did so because key countries in the South built coal- and gas-fired power stations (alongside some nuclear and hydroelectric capacity).

Previous TUED papers have attempted to conduct this interrogation in broad terms and through a global lens. Being more South-focused, this paper shows how different regions of the South have openly embraced variations of green growth as a development agenda, and this has involved some degree of privatisation and liberalisation of energy systems. However, the political implications of the South’s embrace of “green growth” vary because of different levels of national economic development and policy independence *vis-à-vis* global institutions (for example, the World Bank and the IMF).

Some of the economically weaker and/or financially constrained South countries have found themselves on the receiving end of a North-driven “green structural adjustment” that offers “concessional financing” on condition that governments create an “enabling environment” for private investors, both foreign and domestic. Meanwhile, some of the more developed, rapidly growing, and financially independent economies (such as Korea and China) have embraced a version of “green growth” that, in terms of the policies adopted, bears a close resemblance to those adopted and promoted by the rich countries as part of the core agenda of neoliberalism. These more developed economies (especially China) have become a source of finance for other countries of the South. As we shall see, sometimes this financing comes with strings attached (“conditionalities”) although seldom is pressure brought to bear on the borrowing country to privatise and liberalise energy systems in the manner routinely practiced by the IMF and World Bank.³⁶

The third and concluding section of Part One will examine key energy and emissions trends. Perhaps more than any other indicator, these trends illustrate the ineffectiveness of neoliberal policy and the need for a new approach. In the case of the South, two main trends that stand out. These are, first, and energy *expansion* marked by rising energy demand, rising levels of

³⁶ Angela Tritto, “China’s Belt and Road Initiative: From Perceptions to Realities in Indonesia’s Coal Power Sector,” *Energy Strategy Reviews* 34 (2021): 100624, available at <https://doi.org/10.1016/j.esr.2021.100624>.

fossil fuel and other forms of extraction, and steadily increasing levels of emissions (particularly in Asia) and, second, energy *stagnation* marked by persistent energy poverty (especially in Sub-Saharan Africa)

Global Climate Commitments

This first section of Part One will attempt to explain what we mean by neoliberal climate and energy policy and how it has shaped the global policy discourse on energy transition and climate change. Before we proceed, it is also worth reminding ourselves of the political context in which neoliberal climate and energy policies operate and, in particular, the respective roles of the rich and not so rich countries in the energy transition.

Since the early 1990s, climate policy at both the global and national level has been framed by the United Nations Framework Convention on Climate Change (UNFCCC.) The UNFCCC process is best known for the annual “Conference of the Parties”, or COPs. But the UNFCCC also works closely with the Intergovernmental Panel on Climate Change (IPCC), which is an independent scientific body founded under the auspices of the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). The IPCC comprehensive assessment reports on the scientific data as it pertains to climate change, its impacts, and what needs to be done in terms of reducing emissions. It is widely recognised as the most credible source of scientific information on climate change.³⁷

During the early years of the UN climate negotiations, South governments pointed out that most of the world’s emissions had been generated by the rich countries, and poor countries should not be expected to reduce their emissions because doing so would impede economic development. In the early 1990s, roughly half of the world’s population was living on less than \$2 per day.³⁸

The Framework Convention acknowledged that “responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty.” Article 4.7 of the UNFCCC stated that developed countries must take the lead in terms of reducing emissions, providing financial resources, and facilitating the transfer of essential technologies order for developing countries to adapt to the impacts of climate change and begin to chart a development pathway that was more low carbon and sustainable than the resource- and energy-intensive pathway that had been pursued by the Global North. If developed economies cut their emissions while at the same time helping the South to grow

³⁷ <https://unfccc.int/topics/science/workstreams/cooperation-with-the-ipcc>

³⁸ See also: New Economics Foundation (2003) Collision Course: Free trade’s free ride on the global climate London: New Economics Foundation

economically and address extreme poverty, then these two global objectives—the eradication of poverty and addressing the climate challenge—could be compatible with each other.³⁹

Consistent with the Framework Convention, the Kyoto Protocols (1997-2012) and, later, the Paris Agreement (effective since 2016), recognised that developed countries had both a historical responsibility to take the lead in terms of reducing their emissions and the capacity and money to help developing countries begin to transition towards a less carbon-intensive pathway.

“Common but Differentiated Responsibilities and Respective Capabilities.”

As noted above, the responsibility of the rich countries to take the lead in this manner was acknowledged in the principle of “common but differentiated responsibilities and respective capabilities” (CBDR-RC) that was written into the UNFCCC.⁴⁰ Therefore the Kyoto Protocols (KP) required rich countries reduce their emission by an average of 5.2% by 2012 based on 1990 levels. In most instances, countries achieved this target, although the ongoing deindustrialisation of the economies of the North made a major contribution to the targets being reached. Nevertheless, exempting the South from the Kyoto targets contributed to the US not signing on to the Kyoto treaty. By the mid-1990s, China (and to some extent India) was already competitive with US industry, and this was enough for the US Congress to obstruct the adoption of the KP.

The next “big moment” in the history of the UNFCCC occurred at COP 15 in Copenhagen in late 2009. Whereas the Protocol had put in place legally binding targets and timetables for emission reductions, in Copenhagen the Kyoto “architecture” was usurped by a voluntary “pledge and review” system outlined in the 6-page document known as the Copenhagen Accord.⁴¹ The Accord was largely negotiated among three countries—the United States, China, and India—that had hitherto resisted calls to show greater levels of ambition in limiting their

³⁹ Not everyone shared this view. According to Peter Newell, “Energy is clearly pivotal to development. Yet meeting the development needs of the majority of the world’s people in a carbon-constrained world presents a global challenge of staggering proportions.” See: Peter Newell, *Fit for Purpose: Towards a Development Architecture that Can Deliver*. In Eija Palosuo (ed), *Rethinking Development in a Carbon-Constrained World: Development Cooperation and Climate Change*, Ministry of Foreign Affairs, Finland, 2009, ISBN 978-951-724-742-9 “Energy is clearly pivotal to development. Yet meeting the development needs of the majority of the world’s people in a carbon-constrained world presents a global challenge of staggering proportions.”

⁴⁰ <https://unfccc.int/resource/docs/convkp/conveng.pdf>, Common But Differentiated Responsibilities. According to the UNFCCC, “The largest share of historical and current global emissions of greenhouse gases (GHGs) has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs.” At COP26 in Glasgow during November 2021, CBDR-RC was sidelined in favor of ‘common and shared responsibilities,’ a change that was seen by some as an attempt on the part of the developed countries to liberate themselves from their “ecological debts.” See:

https://climateanalytics.org/media/historical_responsibility_report_nov_2015.pdf

⁴¹ TUED Working Paper 2, *Climate Change and the Great Inaction: New Trade Union Perspectives*, Sept. 2014 <https://www.unionsforenergydemocracy.org/working-papers/climate-change-and-the-great-inaction-new-trade-union-perspectives>

emissions. Nevertheless, the involvement of China and India reflected the growing significance of major South economies to the climate negotiations. While less obvious, the Copenhagen Accord blurred the distinction between the respective responsibilities North and South that had been expressed in the CBDR-RC principle.

Following Copenhagen, six additional years of negotiations would produce the Paris Agreement at COP21 in late 2015. The goal of the Agreement was to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aimed to reach global peaking of greenhouse gas emissions as soon as possible to achieve a “climate neutral world” by 2050.⁴² The Paris Agreement declared that developed countries “should continue taking the lead by undertaking economy-wide absolute emission reduction targets” and urged the rich countries to offer “enhanced support for developing country Parties.”⁴³ But between Copenhagen and Paris the US sought to pull down what its negotiators described as the “firewall” between rich and developing countries, maintaining that the distinctions between the two groups of countries enshrined in the Framework Convention were no longer applicable given the rising economic power (and emissions levels) of China, India and other fast-growing developing economies. The US insisted that the CBDR-RC principle should not be used as an excuse for inaction.⁴⁴

After Paris: All Ambition, Little Action

Consistent with the Copenhagen Accord, the 2015 Paris Agreement was built around voluntary national commitments to reduce or slow the rise of emissions, the so-called “nationally determined contributions”, or NDCs. But the NDCs submitted in 2015 fell well short of what the IPCC and others said were required to prevent the worst impacts of climate change.⁴⁵ Fully aware that the NDCs submitted in Paris were not consistent with the science, the UNFCCC proposed that the Agreement contain a “ratchet mechanism” whereby the 196 signatories to the Agreement would review their country’s progress in the context of achieving the “well below 2 degrees” Paris target.⁴⁶

Showing more ambition, by the end of 2021 countries and regions accounting for 54 percent of global emissions had committed to net-zero emissions by 2050. These include Canada, the European Union, Japan, Korea, the United Kingdom, and the United States (all by 2050). Significantly, China declared it would meet net zero by 2060, and India declared by 2070.⁴⁷ By adopting net zero emissions targets, China, India (and many other developing countries) indicated that they would assume their share of responsibility in terms of meeting the Paris targets.⁴⁸

⁴² <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁴³ https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

⁴⁴ https://epub.wupperinst.org/frontdoor/deliver/index/docId/4673/file/4673_COP18.pdf

⁴⁵ <https://climateactiontracker.org/countries/china/>

⁴⁶ According to the Agreement, “A Party may at any time ‘adjust’ its NDC with a view to enhancing its level of ambition.”

⁴⁷ <https://www.un.org/sg/en/content/sg/articles/2020-12-11/carbon-neutrality-2050-the-world%E2%80%99s-most-urgent-mission>

⁴⁸ By September 2022, XXX countries had adopted net zero targets, many from the South. See: <https://climateactiontracker.org/blog/event-climate-week-nyc-2022/>

However, rising levels of climate ambition does not alter several disturbing realities. Even if fully implemented, the new and updated NDCs will, by 2030, reduce global emissions by just 7% based on 2019 levels.⁴⁹ However, the distance between ambition and action is even larger in the case of the South, and particularly so in the Asia-Pacific region. A November 2022 joint report from UNICEF, UNEP and ESCAP titled *2022 Review of Climate Ambition in Asia and the Pacific* looked at the NDCs of 49 countries across the region. Of the 49 countries, 39 have made carbon neutrality and net-zero pledges. Collectively, the 49 countries in Asia and the Pacific were responsible for more than half of global greenhouse gas emissions in 2020. However, “their current NDC commitments are projected to result in a 16 per cent increase [in emissions] from 2010 levels.”⁵⁰

According to the IPCC, emissions must decline by at least 43 percent from 2019 levels to keep the 1.5 Celsius goal within reach.⁵¹ Today, emissions continue to rise and nearly all the major economies are falling behind in terms of meeting their NDC commitments. Put differently, the ambition of countries is not consistent with the science, and actual action is trailing behind the ambition. If this situation is allowed to continue, the longer-term net zero commitments will become meaningless.⁵²

Neoliberal Policy: Systemic and Specific Impacts

The failure on the part of the major economies to get on track in terms of meeting their Paris targets has frequently been attributed to a “lack of political will.”⁵³ But this is not a satisfactory explanation. The truth is more complicated – and it draws attention to the ineffectiveness of neoliberal energy transition and climate protection policies.

The second section of Part One will therefore interrogate the record of neoliberal climate and energy policy and its theoretical underpinnings. Here we draw attention to the contradiction between the “core agenda” of neoliberalism (driven by trade and financial liberalization, the development of new markets and new opportunities to make profit) and the effort to promote

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<https://www.unescap.org/kp/2022/2022-review-climate-ambition-asia-and-pacific-raising-ndc-targets-enhanced-nature-based#>

⁵¹ UNFCCC. 2022b. “National Adaptation Plans.” <https://www4.unfccc.int/sites/NAPC/Pages/national-adaptation-plans.aspx>.

Reporting on the distance between ambition and achievement, the annual *Emissions Gap Report* of the United Nations Environment Programme (UNEP) for both 2020 and 2021 stated that that governments had “collectively failed to stop the growth in global GHG emissions.”

⁵² https://wedocs.unep.org/bitstream/handle/20.500.11822/36991/EGR21_ESEN.pdf,
<https://www.unep.org/emissions-gap-report-2020>;
<https://www.unenvironment.org/resources/emissions-gap-report-2020>;
<https://www.unep.org/resources/emissions-gap-report-2021>;
<https://www.unenvironment.org/resources/emissions-gap-report-2020>;

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<https://www.forbes.com/sites/rogertrapp/2022/11/04/lack-of-political-will-means-business-must-show-lead-on-climate-change/?sh=557436321789>.

“green growth” to decarbonise the political economy and reduce emissions in a manner consistent with the Paris Agreement and the IPCC targets and timetables.⁵⁴

Put differently, the core agenda has produced *systemic* impacts, namely growth, global economic integration, and rising levels of consumption. Meanwhile, neoliberal climate and energy policy has produced a set of *specific* impacts designed to advance the energy transition, reduce emissions, and protect the climate. This has created a situation where the “core agenda” of neoliberalism is pushing the political economy in one direction and neoliberal climate and energy policy is attempting to steer the political economy in a different “greener” direction. Key institutions like the World Bank and the IMF work alongside UN agencies to try to figure out how markets can be created to advance the energy transition as a means to address the threat of climate change, but these same institutions continue to promote policies that make it harder to either reduce emissions (known as “mitigation”) or to handle climate-related disruptions (known as “adaptation”).⁵⁵

But it is the aggressive promotion of economic growth through the liberalisation of trade and finance, accompanied by efforts to undermine and displace public services with private companies that takes priority. This has produced record breaking levels of energy use and emissions. And any prospect of “green growth” policies (such as subsidising renewable energy or pricing CO2 emissions) being able to mitigate the damage to the climate caused by neoliberal policies were annulled by the decision by policymakers to make “green growth” *consistent* with the core agenda.⁵⁶

This was explicitly expressed in Article 3 of the UN’s Framework Convention: in addressing climate change, governments should “promote a supportive and open international economic

⁵⁴ Advocates of “green growth” technological breakthroughs of various types could sharply cut resource use, “dematerialise” production and, in the words of the landmark *Stern Review*, “decouple growth from greenhouse gas emissions” so that production can grow indefinitely while the use of energy and material resources declines. Nicholas Stern, *The Economics of Climate Change: the Stern Review* (Cambridge: Cambridge University Press, 2006), p. xvii

⁵⁵ In 2014 Naomi Klein noted how the UN climate negotiations were a side show when compared to the legal weight of the neoliberal controlled trade and financial system. See: Naomi Klein, *This Changes Everything* (2014) See also Paul Hampton: *Workers and Trade Unions for Climate Solidarity: Tackling climate change in a neoliberal world*, The Routledge Studies in Climate, Work and Society, 2015.

⁵⁶ For an empirical analysis of the impact of the growth of international trade on emissions levels, see: Atkinson G, Hamilton K, Ruta G, Van Der Mensbrugge D. 2011. Trade in ‘virtual carbon’: empirical results and implications for policy. *Glob. Environ. Change* 21(2):563–74. See also: Glen P. Peters and Edgar G. Hertwich, CO₂ Embodied in International Trade with Implications for Global Climate Policy; Industrial Ecology Programme, Norwegian University of Science and Technology (NTNU), NO-7491 Trondheim, Norway, *Environ. Sci. Technol.*, 2008, 42 (5), pp 1401–1407 DOI: 10.1021/es072023k, Publication Date (Web): January 30, 2008 <http://pubs.acs.org/doi/pdfplus/10.1021/es072023k>. Transport-related emissions have risen dramatically as a result of neoliberalism’s “core agenda.” See OECD/ITF, “The Carbon Footprint of Global Trade Tackling Emissions from International Freight Transport,” <https://www.itf-oecd.org/carbon-footprint-global-trade> According to the International Transport Forum, freight transport currently accounts for 30 percent of transport-related emissions (and 8 percent of the global total), and emissions from the trade-related transport are expected to grow by nearly 300 percent by 2050. In percentage terms, the growth of international trade continues to outpace GDP.

system that would lead to sustainable economic growth." According to the Convention, growth for developing countries would enable them to "better address the problems of climate change." Therefore, "measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade."⁵⁷ In simpler terms, the world will somehow have to grow its way to "net zero."

The "Decoupling" Fiction

These contradictions largely explain the ineffectiveness of neoliberal climate and energy policy. But the theoretical underpinnings of "green growth" are also deeply flawed. Neoliberals believe that growth will lead to technological breakthroughs that could sharply cut resource use, "dematerialise" production and, in the words of the landmark *Stern Review*, "decouple growth from greenhouse gas emissions."⁵⁸ Stern heaped praise on multinational companies for taking the lead in demonstrating "how profits can be increased while reducing emissions from industrial activities."⁵⁹ That profits can increase as a result of offshoring of manufacturing to the global South, or through financialization, is not unusual, but the suggestion that economic growth can continue *as is* because production will be progressively "dematerialized" has no empirical basis, and yet it continues to be the core concept that lies at the heart of neoliberal climate and energy policy.

As we will see, today's energy realities—principal among them being fossil-fuel dependency—means that more growth means higher energy consumption and that will inevitably lead to increases in emissions. Efficiencies may lead to the level of emissions rising more slowly for every additional unit of GDP, but emissions will still be on an upward course at a time when climate scientists insist that they need to be falling, and falling fast.

Meanwhile, the policies that were designed to advance the energy transition, mobilize investment, reduce emissions, and protect the climate, etc., have failed to deliver. From the outset, these policies have been shaped by the initial premise that private investors would see a host of business opportunities in addressing climate change and greening the economy, and the role of governments was simply to provide an "enabling policy environment" so that investors could fulfil this mission. The enabling environment would involve (often open-ended) subsidies, tax breaks, incentives, and the like.

For example, in Europe, the US and China, the renewables sector was built because public money was used to make profitable what would not otherwise be profitable.⁶⁰ The same can be

⁵⁷ UNFCCC, Article 3, <https://unfccc.int/resource/ccsites/tanzania/conven/text/art03.htm>

⁵⁸ Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2006), p. xvii

⁵⁹ Stern, *Blueprint for a Safer Planet: How to Manage Climate Change and Create a New Era of Progress and Prosperity*. London: The Bodley Head, page 99. Cited by Paul Hampton, *Workers and Trade Unions for Climate Solidarity: Tackling climate change in a neoliberal world*, *The Routledge Studies in Climate, Work and Society*, 2015.

⁶⁰ <https://rosalux.nyc/wp-content/uploads/2020/09/tuedworkingpaper13.pdf>

said of battery storage, electric vehicles, hydrogen, carbon capture and sequestration, and other so-called green technologies, all of which are heavily dependent on subsidies that are designed to deliver returns to private interests either immediately or over the longer term.⁶¹

Either way, these policies have not helped the world move away from fossil fuels, largely because investment in green technologies has become contingent on private sector engagement. This “maybe yes, maybe no” acts like a veto mechanism. The lack of investment in the energy transition is widely recognised, but the only solution on the table involves committing ever larger amounts of public money to secure “satisfactory returns” to private entities. Up until now, this approach has produced levels of investment that fall far short of what is required.

The “Polluter Pays” Principle and the Commodification of Nature

One of the main pillars of neoliberal green growth thinking was, and remains, the commodification of nature and the creation of new markets. The basic idea is simple: emitters are not held responsible for their atmospheric pollution. The costs of pollution are thus “externalized” to society, representing what economists describe as a “market failure.”⁶² On this basis, Stern describes climate change as “the greatest market failure ever seen.”⁶³ The “polluter pays principle” was developed to address this market failure, by imposing a “carbon price” on emitters at a level that is equivalent to the corresponding potential cost caused through future climate change, forcing emitters to take on, or internalise, the cost of pollution.

For neoliberals, carbon pricing is not simply a policy; in many respects, it is *the* policy. This is because it is considered by mainstream policymakers to be the only economy-wide mechanism that can reduce emissions in a cost-effective way. As UK-based trade union scholar Paul Hampton notes, “Correcting market failure with market instruments is the *sine qua non* of neoliberal climate politics.”

⁶¹ In the case of hydrogen and capture technologies, the global North have pursued “public-private partnerships.” The majority of project costs are covered by public funds; the private companies engage in the hope that a viable market will be developed over the longer term.

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<https://www.lse.ac.uk/granthaminstitute/explainers/why-do-economists-describe-climate-change-as-a-market-failure/>

⁶³ Nicholas Stern, “Summary of Conclusions: Climate Change Ethics and the Economics of the Global Deal,” in *The Economics of Climate Change: The Stern Review*, available at <https://www.cambridge.org/core/books/economics-of-climate-change/A1E0BBF2F0ED8E2E4142A9C878052204>. Stern said: “The science tells us that GHG [greenhouse gas emissions] are an externality; in other words, our emissions affect the lives of others. When people do not pay for the consequences of their actions we have market failure. This is the greatest market failure the world has seen.”

But carbon pricing has been a monumental policy failure. In 2020, barely 16% of global emissions were covered by a price.⁶⁴ For roughly half of this 16%, the price is less than US\$10 per ton of CO₂ — a negligible amount. In 2018, the *Global Commission on Economy and Climate* acknowledged that carbon prices “are still too low to have meaningful impact” and a global carbon price of \$40-\$80 per ton was needed by 2020, rising to \$50-\$100 by 2030. Of course, 2020 has come and gone, but an effective carbon price is still not on the horizon.⁶⁵

The likelihood of an “effective global price on carbon” emerging in the foreseeable future extremely poor. But neoliberal policy makers continue to insist that, absent an effective global price on carbon, emissions reductions consistent with the Paris targets are impossible—thus the need for the major economies to introduce an effective price on carbon!⁶⁶ This kind of circular reasoning and hand waving reflects an incapacity of policy makers to come to terms with the fact that carbon pricing has been a spectacular failure.

Previous TUED working papers have explained why carbon pricing has not taken off, but this cannot be adequately covered here.⁶⁷ The neoliberal idea that nature needed to “be sold in order for it to be saved” is inextricably linked to the need for policy to create new markets, and thus new sources of profit for “ecosystem services” and “green developmentalism.”⁶⁸ A major blind spot in the neoliberal range of vision lies in its inability to detect that the growth of new forms of commodification (atmospheric space, for example) does not necessarily come at the expense of interests that are tied to the “old commodification” of trading in coal, oil and gas. From an investor or capitalist perspective, money can be made in *both* the new “green economy” *and* the old “brown economy.” In the context of energy expansion, many lucrative markets are possible.

Green Growth: Political Cover for Carbon-Based “Development as Usual”?

While unworkable in practice and theoretically incoherent, “green growth” has nevertheless provided political cover for the core neoliberal agenda. And yet, since the early 1990s—or roughly 30 of the 40 years of neoliberal policy hegemony—rising fossil fuel use and climate change were acknowledged to be major civilisational challenges.

By the mid-2000s, key voices in the political mainstream were sounding the alarm. In late 2007—now 15 years ago—IPCC scientists insisted that greenhouse gases needed to start falling immediately to avert a global climate disaster. Then-IPCC Chair Dr. Rajendra Pachauri was clear:

⁶⁴ https://carbonpricingdashboard.worldbank.org/map_data22

⁶⁵ TUED Working Paper, *Carbon Markets After Paris* (February 2016)

⁶⁶ The New Climate Economy, “Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times,” available at <https://newclimateeconomy.report/2018/>.

⁶⁷ The New Climate Economy, “Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times,” available at <https://newclimateeconomy.report/2018/>.

⁶⁸ McAfee, K. 1999. Selling nature to save it? Biodiversity and the rise of green developmentalism. *Environment and Planning D: Society and Space* 17(2), 133–54. See also: James Fairhead, Melissa Leach & Ian Scoones (2012) Green Grabbing: a new appropriation of nature?, *The Journal of Peasant Studies*, 39:2, 237-261. <http://dx.doi.org/10.1080/03066150.2012.671770>

“If there’s no action before 2012, that’s too late.... What we do in the next two to three years will determine our future. This is the defining moment.”⁶⁹ But the defining moment passed, as have others since. At a time when it was already clear that a major policy shift was required, neoliberals persisted with climate policies that served to *reinforce* their core agenda aimed at shifting wealth and economic power further in the direction of private interests at the expense of public services and assets.

The unwillingness of the policy mainstream to acknowledge that the neoliberal approach is not working is inexcusable and announcing increasingly ambitious targets is irresponsible. Persisting with policies that were long ago shown to be ineffective is not an option, and undermining the very public entities (in energy, transport, and other vital services) that have the capacity to play a leadership role in reducing GHGs must be stopped. We will return to these issues in Part Two.

Privatisation “For the Planet.”

One of the defining features of “green growth” is the way power sector privatisation continues to be a policy priority for the World Bank, the IMF, the European Commission, and business-dominated groups such as the World Economic Forum.⁷⁰ Renewable energy independent power producers (or IPPs) have enjoyed government-mandated “out of market protections” at the expense of state-owned enterprises (SOEs).⁷¹ In the transport sector, governments neglected public transport services in favour of policies to promote electric or hybrid vehicles.⁷² Measures to promote energy efficiency have relied on subsidizing consumers instead of introducing mandatory across-the-board efficiency standards and regulations.⁷³ As noted above, the specific policies introduced to address climate change were designed to be compatible with the core neoliberal agenda and its faith in the private sector. As we will see, this “privatise to decarbonise” approach has clear implications for the poorer countries of the South and their prospects for a just energy transition.

Importantly, a 2020 report the World Bank detailed the levels of power sector privatisation and liberalisation that had taken place in the developing world since 1990. Titled *Rethinking Power Sector Reform in the Developing World*, the report noted that, “Barely a dozen developing countries have managed to implement the full 1990s reform package” and “most developing countries find themselves at the early or intermediate stage of the power sector reform

⁶⁹ New York Times, November 17th, 2007 U.N. Report Describes Risks of Inaction on Climate Change <https://www.nytimes.com/2007/11/17/science/earth/17cnd-climate.html>

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<https://www.weforum.org/agenda/2021/06/how-governments-can-shape-markets-towards-green-and-inclusive-growth/>

⁷¹ TUED Working Paper 10, Preparing a Public Pathway, 2017.

⁷² TUED Working Paper 12, The Road Less Travelled, 2019. See also: International Transport Workers Federation [ref needed]

⁷³ Refs needed here

agenda.” The Bank notes, “most aggressive reformers are found in Latin America and the Caribbean (Argentina, Brazil, Guatemala, Nicaragua, and Peru) as well as Europe and Central Asia (Romania and Turkey)..Jordan, Nigeria, and the Philippines stand out as aggressive reformers in regions where bold reform has not been the norm; India also figures in this group.”⁷⁴

It is important to note that the “aggressive reformers” were mainly in regions of the world where the IMF and World Bank imposed structural adjustment programmes (SAPs) during the 1990s (Latin America, the Caribbean, the former Soviet bloc countries (Poland) and regions (Ukraine).

In the 1980s and 1990s, the case for power sector privatization revolved around the need for higher levels of efficiency, more innovation, price reduction through competition, and to secure new (private) sources of investment. State-owned energy monopolies were depicted as inefficient, resistant to change, a drain on public budgets, and often corrupt. The IMF’s “shock therapy” in the former Soviet Union and Eastern bloc countries also pushed across-the-board privatisation of public assets and services.

In recent years, however, the justification or rationale for energy privatisation has changed. Following the global financial crash of 2007, liberalisation and privatisation of energy were increasingly presented as essential tools to address climate change. Consistent with the idea of the “leading role of the private sector” and the need to create an “enabling environment,” neoliberals asserted that a reduced role for public energy was critical to the effort to interest investors and promote renewables. In the public discourse, those who support privatisation were considered friendly to the climate; those who oppose privatisation were mere apologists for the continued use of fossil fuels.⁷⁵

TUED’s research has shown how neoliberal policy had a major impact on how state-owned enterprises (SOEs) operate in both the North and the South.⁷⁶ The market reforms to advance privatisation and liberalisation in the 1980s and 1990s meant that SOEs were frequently stripped of their status as publicly owned monopolies operating under a public service and/or

⁷⁴ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Sustainable Infrastructure Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 66

⁷⁵ In Part Two of this framing document, we will explore how TUED South has a role to play in countering this narrative with facts-based arguments and clear policy proposals. The push for privatization and liberalisation has been accompanied by IMF-driven campaign to remove subsidies, which is actually a campaign to push back the role of South-based governments in determining energy choices and prices—an issue we return to below.

⁷⁶ Many North-based environmental groups make the mistake of associating public companies with monopoly power, fossil fuel use, and opposition to renewable energy, and many have embraced the idea that “unbundling” public energy companies and opening the door to the private sector will help accelerate a transition away from fossil fuels.

national development mandate. Instead, SOEs were required to compete alongside other “market actors” from the private sector.⁷⁷

In Part Two of this document, we will examine how even key voices in the policy mainstream are beginning to question the wisdom of the “privatise to decarbonize” approach. This is creating space for a *public pathway* alternative.

The South’s Embrace of Green Growth

As a narrative, “green growth” created space for rapidly growing economies of the South to continue a development trajectory that, while marked by high levels of inequality, has raised living standards for the poorest while facilitating the formation of a growing middle and upper-middle class.

Key South governments have acknowledged that climate change reinforces the need for higher levels of energy efficiency; the decarbonization of power generation, transport, heating and cooling, and so on. Nevertheless, many have become willing partners with the North in reproducing the dynamics of a political economy that will see energy use and emissions continue to rise far beyond what might be required to meet basic human needs.

For example, as early as 2008 the Republic of Korea explicitly referred to “green growth” “as a global agenda, especially, as a new development strategy to be shared by the emerging and developing economies.”⁷⁸ During this period Korea launched the *East Asia Climate Partnership* as well as the *Global Green Growth Institute*. At the G7 meeting in September 2009, Korea advocated strongly for green growth and launched the *Global Green Growth Summit*.⁷⁹

Importantly, the policies that the Korean government proposed to advance a green growth development model were identical to the ones proposed in the early 1990s by the North-based pioneers of green growth such former World Bank chief economist Nicholas Stern, author of *The Stern Review*. The Korean government reinforced several of Stern’s main messages: “Businesses stand to gain from this transition. But governments have to create the enabling conditions for businesses to thrive in a green economy.” Governments also need to “reduce uncertainty and risk for investors” and support carbon pricing, hoping (as did Stern) that it

⁷⁷ Being aware of the impact of neoliberal policy on SOEs can help prevent the kind of confusion that have become quite commonplace regarding the differences between what are still publicly owned companies and those that are, or became, privately owned. Perhaps one of the political tasks of TUED South is to help environmental activists break from this kind of thinking, which is corrosive to building a broad and sustained opposition to the neoliberal approach to energy transition.

⁷⁸ ESCAP 2012: Low Carbon Green Growth Roadmap for Asia and the Pacific
<https://www.unescap.org/kp/2012/low-carbon-green-growth-roadmap-asia-and-pacific-phasaitly>

⁷⁹ ESCAP 2012: Low Carbon Green Growth Roadmap for Asia and the Pacific
<https://www.unescap.org/kp/2012/low-carbon-green-growth-roadmap-asia-and-pacific-phasaitly>

would “provide significant incentive for private-sector innovation” and harness “the power of markets and strategically reforming prices to reflect the full cost of resource consumption.”⁸⁰

BRICS: Energy Commodification and Expansion [note to editor: I am inclined to delete this]

The emergence of the “BRICS” group in 2010 (Brazil, Russia, India, China, and South Africa) initially raised hopes that key countries of the South might offer an alternative to the neoliberal agenda that had produced the IMF-driven structural adjustment programs (SAPs) that caused economic devastation across many countries of the South during the 1980s and 1990s.

But any hope that the BRICS might provide a political platform that might facilitate the development of an alternative to neoliberalism has long since dissipated. The emergence of Modi (India) and Bolsonaro (Brazil), alongside the enduring presence of Putin (Russia), contributed to this outcome.

BRICS did not merely come to terms with neoliberalism; today BRICS are equal partners with the OECD countries of the North in terms of perpetuating the trade-led growth model that lies at the heart of the neoliberal agenda.⁸¹

However, the current political economy of energy has made a major contribution to the assimilation of BRICS into the broader neoliberal order. The availability of, on the one hand, energy resources in the South and, on the other hand, rising energy needs, has elevated all forms of energy into a highly valuable commodity, and BRICS have come to exemplify the “energy expansion, not an energy transition” trend that captures one of the main messages of this document.

Energy Reform in the South

Prior to their embrace of “green growth” as a development framework, many countries of the South had emulated the kind of power sector reforms that were first introduced in the UK, the US, and the EU in the 1980s and 1990s. They supported the idea that the private sector should play a larger role and took steps to reform their public energy systems to encourage competition and, in some instances, to attract foreign investment. Many South governments accepted the need to create “an enabling environment” (market liberalization, subsidies, incentives, tax concessions, etc.) for private interests.

Accompanying varying degrees of liberalisation was the “marketization” of SOEs, where public companies remain public but are required to become for-profit entities where cost recovery, attracting private investment, and reducing labour costs are prioritized. As we will see, in the

⁸⁰ <https://www.unescap.org/kp/2012/low-carbon-green-growth-roadmap-asia-and-pacific-phasaitly>

Turning resource constraints and the climate crisis into economic growth opportunities

⁸¹ Xi Jinping, “President Xi’s speech to Davos,” World Economic Forum, January 17, 2017, <https://www.weforum.org/agenda/2017/01/full-text-of-xi-jinping-keynote-at-the-world-economic-forum>.

poorer countries of the South, marketization led to a weakening of the SOEs resulting in financial fragility, a marked slowdown in electrification programs, and capacity stagnation—all of which can be addressed as part of a *public pathway* alternative.

However, in other countries of the South marketization of SOEs has produced different outcomes. Today energy-sector SOEs in the fast-growing economies enjoy the support and protection of home-country governments, and some SOEs have become successful multinational companies that operate like traditional capitalist entities. SOEs often generate revenue for governments through energy sales, taxes, and royalties.⁸² SOEs are major players in coal, oil and gas, but many are also very active in global renewable energy and nuclear energy markets.⁸³

For example, China's energy sector reforms broadly coincided with the shift on the part of the Chinese government towards a "socialist market economy" and the adoption of the "open door" policy in the late 1980s that invited private investors to invest in China, normally under a "joint venture" approach where the Chinese state owned 51% of the assets of new companies or subsidiaries of existing multinationals. According to the Center for Strategic & International Studies (CSIS), China's socialist market economy policy "assumes that state corporations can act as profit-making entities under loose government guidelines... Since the 1990s, this policy has led to the transformation of China's energy SOEs from pure implementers of government plans to active market participants."⁸⁴

Beginning in 2013, Xi Jinping's government introduced further reforms aimed at increasing competition between public and private energy companies. According to CSIS, the government aimed "to open up competitive business to nonstate participants and expand the room for private and non-state participants and expand the room for private and nonstate business so as to break up the monopoly by [sic] SOEs."⁸⁵

China's entry into the World Trade Organisation at the end of 2001 saw Chinese SOEs become increasingly present at the international level, especially in the South. However, China's SOEs

⁸² Wehrl, F. and J. Pohl (2016), "Investment Policies Related to National Security: A Survey of Country Practices", OECD Working Papers on International Investment, No. 2016/02, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5jlwrrf038nx-e>

⁸³ For example, the main Korean energy utility, KEPCO operates internationally and is partnering with private renewable energy companies. See: <https://home.kepco.co.kr/kepco/EN/B/htmlView/ENBJHP00203.do?menuCd=EN02080103> "The Korean energy SOE KEPCO "is actively involved in global clean energy markets, such as Japan and USA, the largest energy market in the world, by initiating commercial operation of solar power plant in Chitose, Japan (28 MW, July 2017), acquiring shares of a solar power plant in Colorado, USA (30 MW, August 2016), winning a solar power plant project in Guam, USA (60 MW, June 2017) and acquiring a solar power plant in California, USA (235 MW, March 2018)."

⁸⁴ Kang Wu and Jane Nakano, *The Changing Political Economy of Energy in China: Market Dynamics and Policy Developments*, Center for Strategic & International Studies, 2016

⁸⁵ Kang Wu and Jane Nakano, *The Changing Political Economy of Energy in China: Market Dynamics and Policy Developments*, Center for Strategic & International Studies, 2016

continue to have access to government financing on favourable terms, and they have positioned themselves to meet the rising demand for energy in many countries of the South while at the same time continuing to be dominant market players inside China.

In his speech to the 19th National Congress of the Communist Party of China October 18, 2017, President Xi Jinping explained how reform of SOEs would continue, and was consistent with a “green development” and “moderate growth” agenda:

In the state-owned sector, we will step up improved distribution, structural adjustment, and strategic reorganization. We will work to see that state assets maintain and increase their value... We will further reform of state-owned enterprises, develop mixed-ownership economic entities, and turn Chinese enterprises into world-class, globally competitive firms.

We will step up efforts to establish a legal and policy framework that promotes green production and consumption, and promote a sound economic structure that facilitates green, low-carbon, and circular development. We will create a market-based system for green technology innovation, develop green finance, and spur the development of energy-saving and environmental protection industries as well as clean production and clean energy industries. We will promote a revolution in energy production and consumption, and build an energy sector that is clean, low-carbon, safe, and efficient. Taking a driving seat in international cooperation to respond to climate change, China has become an important participant, contributor, and torchbearer in the global endeavor for ecological civilization.⁸⁶

Several months earlier, in May 2017, President Xi Jinping endorsed both “green development” and trade liberalization the opening of the Belt and Road Forum in Beijing.⁸⁷ The speech emphasized how China would “Advance the building of free trade areas and promote liberalization and facilitation of trade and investment” as a means to “pursue the new vision of green development and a way of life and work that is green, low-carbon, circular and sustainable.” Energy sector reform would continue, because, said President Xi, “We need to seize opportunities presented by the change in energy mix and the revolution in energy technologies.”⁸⁸ In 2021 China announced it would no longer finance new coal fired power stations outside of its borders,⁸⁹ and would help establish “an international coalition for green development on the Belt and Road, and we will provide support to related countries in adapting to climate change.”⁹⁰

⁸⁶ http://www.xinhuanet.com/english/download/Xi_Jinping's_report_at_19th_CPC_National_Congress.pdf

⁸⁷ <https://china.usc.edu/president-xis-speech-opening-belt-and-road-forum-may-14-2017>

⁸⁸ <https://china.usc.edu/president-xis-speech-opening-belt-and-road-forum-may-14-2017>

⁸⁹ <https://chinadialogue.net/en/energy/china-to-stop-building-new-coal-power-projects-overseas/>,
<https://chinadialogue.net/en/business/understanding-chinas-latest-guidelines-for-greening-the-belt-and-road/>,
http://en.brigc.net/Reports/Report_Download/2020/202012/P020210202120471013629.pdf

⁹⁰ <https://china.usc.edu/president-xis-speech-opening-belt-and-road-forum-may-14-2017>

At the 20th Party Congress in October 2022 (which took place following the TUED South launch in Nairobi) President Xi Jinping declared that China “will provide an enabling environment for private enterprises” and facilitate the growth of the private sector. He added, “We will boost green and low-carbon industries and improve the system for market-based allocation of resources and environmental factors.” However, President Xi also said “We must uphold and improve China's basic socialist economic system. We must unswervingly consolidate and develop the public sector and unswervingly encourage, support, and guide the development of the non-public sector.” Xi referred to “initiatives to reach peak carbon emissions in a well-planned and phased way in line with the principle of building the new before discarding the old.”⁹¹

Power Sector Reform in Vietnam, Korea, and India

Turning now to other high-growth economies in Asia, namely Vietnam, Korea and India, we can see that energy reform has been partial, and has produced a mix of outcomes.

Vietnam’s power sector reform began in July 2005. According to the Asia Development Bank (ADB), this law was enacted specifically “to remedy the pricing inefficiencies that were preventing the sector from adequately funding system maintenance, improvements, and expansion,” and attributed the subsequent rise in per capita levels of electricity consumption to the reforms.⁹² However, the increases were made possible by the expansion of the network under National Power Development Plan VI, and largely pre-date any move towards competition or private ownership—a fact that was eventually acknowledged by the World Bank in its 30 year review of electricity privatisation.⁹³ By the time the reform process started, Vietnam had already achieved 96% access to electricity.

Korea’s power sector reforms began in April 2002 at a time when 79% of the population already had access to electricity generated by the public power utility, KEPCO.⁹⁴ KEPCO was divided into 6 power companies and the reform attempted to divide the power distribution system. In 2003, however, the sale of the Korea South-East Power Company was halted, and the division of power distribution was discontinued in 2004. As a result, the privatization policy of the power generation company was effectively suspended. “However, the privatization policy of the electric power industry later turned to the marketization of power and gas as a whole, allowing new power plants to the private sector and allowing LNG direct importation, which is a fuel for LNG power generation, to the private energy conglomerates. The pattern of privatization policy itself has changed from the sale method to the way that

⁹¹ Transcript: President Xi Jinping's report to China's 2022 party congress (October 2022)
<https://asia.nikkei.com/Politics/China-s-party-congress/Transcript-President-Xi-Jinping-s-report-to-China-s-2022-party-congress>

⁹² ADB, Assessment of Power Sector Reforms in Viet Nam: Country Report, September 2015.
<https://www.adb.org/documents/assessment-power-sector-reforms-viet-nam>

⁹³ This was acknowledged by the World Bank in 2020, See:

⁹⁴ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS>

private energy conglomerates are allowed to penetrate the market and to promote entry in power generation.” [can’t find reference]

India’s energy reform began with the passing of the Electricity Act in 2003, roughly 8 years following the sweeping structural adjustment of the Indian economy that were introduced in 1991 under the New Economic Policy. The Indian government had already begun to implement austerity measures as prescribed by the 1980s structural adjustment programs to recover from a severe debt repayment crisis. But the Indian government had become more supportive of the private sector and the “opening up” of the economy a full decade before the 1991 balance of payments crisis and the interventions of the World Bank and IMF.⁹⁵

Prior to the 2003 Electricity Act, both demand and consumption of electricity has doubled from 1990 to year 2000, and the State Electricity Boards (SEBs) that operated under the jurisdiction of regional states struggled to keep up with the demand trajectory due to lack of investment capital. Under the Ninth Five Year Plan from 1996 to 2001, the government called for 40.2 GW of new installed capacity. By 2001, only 19.1 GW of additional capacity was online, with the private sector contributing only a fraction of new generation.⁹⁶

The reform legislation contained a provision for “open access”, which gave choice to “bulk consumers” to choose their supplier. It also opened the door to IPPs. In the two decades since the reform, private companies have carved out a big stake in India’s power generation sector.

But from the perspective of the energy transition, India’s power sector is in crisis. And the cause of the crisis can be traced back to the power sector reform agenda. A large chunk of generation was privatized during this period, and IPPs (in coal, gas and renewables) currently generate roughly 50% of India’s electricity. However, the still publicly-owned distribution companies (known as “discoms”) are often so burdened by debt that they cannot afford to pay the generation companies (“gencos”).⁹⁷

In India and elsewhere, the policy has been to guarantee profits to private-sector IPPs while shifting the system costs over to the often still-public transmission and distribution companies, thus incurring more debt for the latter. In India’s case, the discoms are expected to provide services to poor people that, in many instances, have little capacity to pay. Voices urging further privatization call for the discoms to stop providing free electricity to rural dwellers and to introduce pre-paid meters. We will return to this issue in Part Two when we discuss the public pathway approach to addressing energy poverty.

⁹⁵ <https://www.imf.org/External/Pubs/FT/staffp/2004/00-00/rodrik.pdf>

⁹⁶ Peter M. Lamb, *The Indian Electricity Market: Country Study and Investment Context*, Working Paper # 48, August 16, 2005 (Updated July 2006), Program on Energy and Sustainable Development At the Center for Environmental Science and Policy, Stanford University.

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<https://www.deccanherald.com/national/discoms-aggregate-loss-rises-66-to-rs-50281-cr-in-2020-21-report-1153696.html>

As with other developing countries during this period, the SEBs provided free electricity to power groundwater pumps in rural villages as part of a national effort to raise agricultural productivity.⁹⁸ Many villages “stole” electricity from the SEBs (“electricity theft” has become a target of World Bank policy for decades). Many of India’s SEBs fell into debt, and privatisation was seen as a way of attracting capital and the government encouraged states to give space to IPPs. Some states also privatized distribution, others “unbundled” their SEB, and a few opted against reform, keeping the SEBs intact and reforming internally.⁹⁹

One of the downsides of privatisation was the dramatic slowdown in India’s Rural Electrification Action Plan, which originally hoped to achieve 100% electrification of villages by 2007.¹⁰⁰ Today, India’s largest power company, NTPC is still public and is being encouraged to enter the renewable energy markets—an issue we return to in Part Two.¹⁰¹ [note to editor: this has yet to be written]

In June 2020, India’s Power Minister RK Singh warned that “[private] investment will not come unless and until there is viability in the system, unless and until the people who put money are assured that power they generate and sell will be paid for. That is the basic problem of sustainability we are facing.”¹⁰² Advocates of “privatise to decarbonize” policies in India have therefore targeted the discoms for privatization. According to one source, “Without reforming this bankrupt industry, India will struggle to meet its bold target of raising non-fossil-fuel generation capacity — including hydroelectric and nuclear power — to 500 gigawatts by 2030, up from roughly 150 gigawatts now.”¹⁰³ A June 2022 statement from the rating agency Moody’s referred to the “weak financials of state-owned distribution companies have led to delays in the signing of Power Purchase Agreements (PPAs).” According to the agency, India’s ambitious renewable energy targets were being threatened by “project delays or cancellations.”¹⁰⁴

⁹⁸ Peter M. Lamb, *The Indian Electricity Market: Country Study and Investment Context*, Working Paper # 48, August 16, 2005 (Updated July 2006), Program on Energy and Sustainable Development At the Center for Environmental Science and Policy, Stanford University.

⁹⁹ Peter M. Lamb, *The Indian Electricity Market: Country Study and Investment Context*, Working Paper # 48, August 16, 2005 (Updated July 2006), Program on Energy and Sustainable Development At the Center for Environmental Science and Policy, Stanford University.

¹⁰⁰ Peter M. Lamb, *The Indian Electricity Market: Country Study and Investment Context*, Working Paper # 48, August 16, 2005 (Updated July 2006), Program on Energy and Sustainable Development At the Center for Environmental Science and Policy, Stanford University.

¹⁰¹ <https://www.iisd.org/publications/report/india-state-owned-energy-enterprises>

¹⁰² <https://www.bqprime.com/politics/investment-will-not-come-in-unviable-power-sector-says-r-k-singh>

¹⁰³ <https://www.deccanherald.com/opinion/there-s-an-80-billion-hole-in-india-s-climate-pledge-1048731.html>

¹⁰⁴

https://www.business-standard.com/article/companies/weak-discoms-remain-a-hurdle-for-india-s-renewable-energy-sector-moody-s-122061300360_1.html. For an example of how the private renewable energy companies are pushing privatization, see:

<https://www.saurenergy.com/solar-energy-news/investment-crunch-discoms-twin-hurdles-to-indias-2070-re-target-moodys>

Success Becomes Failure: The Impact of Privatisation and Marketisation of State-Owned Enterprises

We can see from the above that the rapidly developing economies of the South—among them China, India, Korea, and Vietnam—have embraced a version of “green growth” that closely resembles the version adopted by countries of the North. Accompanying the adoption of “green growth” has been the reform of public energy companies in ways that turn them into capitalist enterprises both domestically and, in the case of China and Korea, internationally. Further emulating the North, they have subsidised private renewable energy IPPs and liberalised energy markets. But, as we will see, these policies have done little to impede the rise of fossil fuel production and consumption and have, the evidence suggests, led to large increases in both.

Equally important, power sector reform has impeded the energy transition. In countries where SOEs have become successful global companies and/or retain market dominance at home, they are central players in the energy expansion and benefiting from the commodification of electricity as a source of revenue and profits. However, in many low income countries, SOEs have been undermined, decapitalized, and in many instances paralyzed by liberalization and marketization, thus rendering them incapable of playing a leading role in the energy transition. In either case, rather than advancing the transition to a low carbon future, the specific outcomes of neoliberal privatization are contributing to the problem of rising emissions and climate change. In Part Two we will consider how a *public pathway* approach might begin to address these contrasting realities. The challenges are extremely daunting. But if the alternative is “business as usual” then such an alternative is unacceptable from either a social or and ecological standpoint.

Climate Finance and the “Enabling Environment”

Efforts to privatize power systems have often hinged on the fact that many low and middle-income countries in the South have highly constrained budgets and do not have the up-front capital to invest in capital-intensive energy infrastructure.¹⁰⁵ Neoliberals have suggested that the only way to address the lack of capital is to create an “enabling environment” for private investors. The term “enabling environment” operates as code for privatization, marketization and subsidies for private interests. This is what we mean by “green structural adjustment.”

¹⁰⁵ According to UNCTAD, the total debt stocks of all developing countries (external and domestic, private and public) stood at roughly 191% of GDP at the end of 2018 — in other words, nearly double these countries’ total combined GDP. Of this, nearly three-quarters is private debt; the remainder public debt. UNCTAD, *From the Great Lockdown to the Great Meltdown: Developing Country Debt in the Time of Covid-19*, April 2020, <https://unctad.org/webflyer/great-lockdown-great-meltdown-developing-country-debt-time-covid-19>. It should be kept in mind that much mainstream reporting on debt still reflects the orthodox understanding that is currently being challenged. What is of crucial importance for public spending in developing countries is *public external debt*: government debt that is denominated in “hard” foreign currencies like the US Dollar, the Euro, the British Pound, etc.

The push for structural adjustment lies at the heart of the UNFCCC debates on climate finance but, as we have seen, neoliberal reforms of public power systems pre-date the global effort to promote and protect renewable sources of energy. In the case of India (discussed above) the push for IPPs began in the 1990s. But the World Bank and IMF logic has been consistent throughout: there is no *public pathway*; the private pathway is the only option.

As noted above, the Kyoto Protocols acknowledged the ecological debt of the North to the South, and the North agreed (in principle) to support the South deal with the impacts of climate change, promote alternatives to fossil fuels, and assist in helping the South avoid the kind of carbon-intensive development that (along with colonial exploitation) made the countries of the North wealthy. But the financial support envisaged by the North would not be grant-based; rather, it would for the most part consist of “concessional” loans, and these loans would involve “conditionalities,” and they would impose more debt on the South.

At this point it is worthwhile summarizing where things stand with climate finance. At COP15 in Copenhagen in 2009, rich countries committed to a goal of “mobilizing” jointly \$100 billion a year by 2020 to help the South.¹⁰⁶ The commitment stipulated that that the finance would come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance.¹⁰⁷ At COP21 in Paris in 2015, Parties extended the US\$100 billion annual goal through 2025.¹⁰⁸ But the \$100 billion annual target has (until 2022 at least never been reached. Furthermore, the \$100 billion target was already far below the \$400 billion that the G77 countries, backed by the least developed countries and small island states, had earlier proposed (the equivalent of 1% of rich countries' GDP).¹⁰⁹ It is nevertheless clear that the rich countries of the North have not honoured their commitments to provide financial assistance to the South. For many progressive NGOs, this merely reflects a stingy attitude on the part of the rich countries to help the South even though the rich countries accept that they have an obligation to do so.

But as an explanation, rich-country stinginess only goes so far. Neoliberal policy has changed how “aid” in the form of finance is channeled towards the South. The premise behind the idea of “concessional financing” is that it would “catalyze” private investment. This idea is itself tied to the expectation that private investors will be attracted by the prospect of securing “satisfactory returns.”

Therein lies the fundamental problem: the prospects for profit making in the South are poor, and private investors know it. The UNFCCC's, *Standing Committee on Finance* recently noted, “the level of climate finance is considerably below what one would expect given the investment opportunities and needs that have been identified.”¹¹⁰ But while the needs are obvious,

¹⁰⁶ UNFCCC, Decision 2/CP.15

¹⁰⁷ The finance goal was then formally recognized by the UNFCCC at COP16 in Cancun a year later. UNFCCC, Decision 1/CP.16

¹⁰⁸ UNFCCC, Decision 1/CP.21

¹⁰⁹ <https://www.theguardian.com/environment/2009/dec/17/us-copenhagen-100bn-climate-fund>

¹¹⁰ UNFCCC, *Standing Committee on Finance, 2018 Biennial Assessment and*

investment opportunities that can yield “satisfactory returns” are conspicuous by their absence.

Climate Finance Delivery (Return to Sender)

At COP26 in Glasgow in November 2021, it was announced that rich countries were closing in on the \$100 billion per year target but, unfortunately, had not quite gotten there yet. Data on the state of climate financing was presented to COP26 in the *Climate Finance Delivery Plan: Meeting the US\$100 Billion Goal*.¹¹¹ Almost \$80 billion had been “mobilized” in 2019 and this figure was expected to increase once the 2020 data had been fully compiled.¹¹² According to the *Delivery Plan*, \$63 billion came from public sources, with the multilateral development banks (MDBs) leading the way. Of the public money committed in 2019, the shares represented by loans (including both concessional and non-concessional) and grants were, respectively, 71% and 27%.

It is difficult to arrive at a clear understanding of climate financing based on these data, except to say that, while a good portion of the dollars mobilized were tied up in grants, a larger portion came in the form of loans that—by definition—involve some kind of payback regardless of whether they are “concessional” or not.¹¹³ In other words, if climate finance was designed to address the North’s ecological debt—which is central to the original idea—then a lot of it has been packaged in a way that incurs further debt to the already debt-burdened South.¹¹⁴

The potential role of development aid in financing a public pathway approach the energy transition and addressing energy poverty will be examined in Part Two. From the perspective of offering a *public pathway* alternative that can draw on the resources of the North, it is worth noting that for every \$4 committed to climate financing by public financial institutions, less than \$1 was added by the private sector—and most of the private sector commitment was classed as “non concessional.” This suggests that the private investment committed was expected to produce market-typical returns.¹¹⁵

Overview of Climate Finance Flows

--<https://unfccc.int/topics/climate-finance/resources/biennial-assessment-of-climate-finance>

¹¹¹ Climate Finance Delivery Plan: Meeting the US\$100 Billion

Goal.<https://ukcop26.org/wp-content/uploads/2021/10/Climate-Finance-Delivery-Plan-1.pdf>

¹¹² Climate Finance Delivery Plan: Meeting the US\$100 Billion

Goal.<https://ukcop26.org/wp-content/uploads/2021/10/Climate-Finance-Delivery-Plan-1.pdf>

¹¹³ It should be kept in mind that much mainstream discourse on debt reflects the orthodox understanding that is currently being challenged by MMT theorists. What is of crucial importance for public spending in developing countries is *public external debt*: government debt that is denominated in “hard” foreign currencies like the US Dollar, the Euro, the British Pound, etc. The Oxfam report reflects the orthodox understanding of debt. See: Oxfam, Climate Finance Shaddow Report, 2020

<https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621066/bp-climate-finance-shadow-report-2020-201020-en.pdf?sequence=1>, page 3

¹¹⁴ Oxfam, Climate Finance Shaddow Report, 2020

<https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621066/bp-climate-finance-shadow-report-2020-201020-en.pdf?sequence=1>, page 3

¹¹⁵ Climate Finance Delivery Plan: Meeting the US\$100 Billion

Goal.<https://ukcop26.org/wp-content/uploads/2021/10/Climate-Finance-Delivery-Plan-1.pdf>, page 6

Global Energy Trends: Expansion and Stagnation

The final section of Part One of this framing document will, first, look at global energy trends and, second, summarize what is happening in the South in terms of energy *expansion* and the persistence of energy poverty due to capacity *stagnation* – particularly in sub-Saharan Africa.

It was noted above that the macro-level systemic impact of neoliberal economic management is reflected in the fact that what we are seeing globally is an energy *expansion*, not an energy *transition*.¹¹⁶ Meanwhile, the energy expansion continues to drive up emissions. Following a temporary decline in 2020 amidst the COVID-19 pandemic, global CO2 emissions rebounded to their highest-ever level in 2021. In the electric power sector, emissions from coal and gas 3.4% and 3% higher than their previous peaks in 2019.¹¹⁷

Global energy trends illustrate the ineffectiveness of neoliberal policy and the need for a new approach. “Green growth” has not significantly slowed the rise in emissions. Claims that green growth can decouple increased economic activity from rising emissions levels have no basis in fact and add up to a barely concealed effort to “greenwash” carbon-intensive development. And while energy is being used more efficiently and renewables are growing, the world is *not* moving away from fossil fuels. On the contrary, fossil fuel use is growing—particularly in the South.

Looking more closely at global energy trends, we can see that coal, oil and gas still account for 82% of total primary energy consumption worldwide.¹¹⁸ Roughly three-quarters of new energy demand is currently being met by fossil fuels. And because fossil fuel use is increasing, CO2 emissions are rising, and the threat of climate change is becoming increasingly serious.¹¹⁹

Here's a snapshot of the global trends in terms of fossil fuel use:

¹¹⁶ NUM, NUMSA, SAFTU, AIDC, TUED, TNI: Eskom Transformed: Achieving a Just Energy Transition for South Africa. TUED and TNI: Energy Transition or Energy Expansion?

¹¹⁷ International Energy Agency (2022) Global Energy Review: CO2 Emissions in 2021 [data & statistics]. <https://www.iea.org/reports/global-energy-review-co2-emissions-in-2021-2>. These increases outpaced the contingent declines in oil-related emissions, which were 5.7% lower in 2021 than they were in 2019. The major driver of this decline has been a slowdown in global aviation, with oil demand in the aviation sector 33% lower in 2021 than it was two years prior.

¹¹⁸ bp (2022) Statistical Review of World Energy 2022. <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf>.

¹¹⁹ A Joint Report by the International Energy Agency and the Centre for Climate Finance & Investment, March 2021, page 8

- Global **coal** use is today [late 2022] at *record levels*.¹²⁰ Over the last 30 years or so, coal use has *doubled* due to rising levels of consumption in China and India, but also in Vietnam, Indonesia, Turkey and elsewhere.¹²¹ ¹²² In the power sector, the construction of new coal-fired power stations has slowed down in recent years, but coal-fired generation grew from under 1000 GW of installed capacity in 1990 to more than 2000 GW in 2018, and most of the new power stations are in Asia.¹²³
- The use of **gas** has also been growing rapidly.¹²⁴ During the past decade, the use of gas in the power sector has grown faster than any other source of energy.¹²⁵ Globally, demand for gas has roughly doubled since 1990 and is expected to continue its rapid rise in the years ahead, absent a major shift in policy.¹²⁶ The IEA projects that demand for gas is expected to rise by 14% above 2019 levels by 2030, with most of that growth taking place in Asia.¹²⁷
- **Oil** consumption continues to trend upwards. In early 2015 oil consumption was 95 million barrels per day (b/d.) By late 2019 consumption had surpassed 100 million b/d—an increase of over 5.2%.¹²⁸ The pandemic led to a significant reduction in oil consumption, but recent estimates suggest that the global consumption of petroleum and liquid fuels will average 99.4 million b/d for all of 2022, which is a 2.1 million b/d increase from 2021. According to the Energy Information Administration, “Global consumption of petroleum and liquid fuels will increase by another 2.1 million b/d in 2023 to average 101.5 million b/d.” In 2021 the IEA noted, “In the absence of major

¹²⁰

https://www.iea.org/reports/coal-2021?utm_source=SendGrid&utm_medium=Email&utm_campaign=IEA+newsletters

¹²¹

<https://www.iea.org/commentaries/global-coal-demand-surpassed-pre-covid-levels-in-late-2020-underlining-the-world-s-emissions-challenge>

¹²² See IEA on rising coal use:

<https://www.iea.org/commentaries/global-coal-demand-surpassed-pre-covid-levels-in-late-2020-underlining-the-world-s-emissions-challenge> See also: Robert Rapier, “Global Coal Consumption Is Being Driven By Developing Countries,” Forbes, Jul 19, 2020, 06:00pm EDT,

<https://www.forbes.com/sites/rrapier/2020/07/19/global-coal-consumption-is-being-driven-by-developing-countries/>

<https://www.forbes.com/sites/rrapier/2020/07/19/global-coal-consumption-is-being-driven-by-developing-countries/>

¹²³ <https://www.worldcoal.org/installed-coal-generation-capacity-countryregion-1>

¹²⁴ Presentation by Spencer Dale, British Petroleum chief economist, Energy in 2018: an unsustainable path, London, 11 June 2019

¹²⁵ <https://www.iea.org/reports/natural-gas-fired-power>

¹²⁶ IEA, Global natural gas demand by scenario, 2010-2030, 12 Oct 2020,

<https://www.iea.org/data-and-statistics/charts/global-natural-gas-demand-by-scenario-2010-2030>

¹²⁷ IEA, *World Energy Outlook 2020 — Outlook for Energy Demand*, October 2020,

<https://www.iea.org/reports/world-energy-outlook-2020/outlook-for-energy-demand> The IEA presents their forward-looking projections in terms of alternative “scenarios,” based on different sets of assumptions. The “Stated Policies Scenario” (STEPS) reflects a projection based on currently stated “policy intentions and targets, insofar as they are backed up by detailed measures for their realisation.”

¹²⁸ https://www.eia.gov/outlooks/steo/report/global_oil.php

policy changes from governments and more rapid changes in behaviour, global oil demand is set to increase for years to come.”¹²⁹

Modern Renewables: The Global Picture

In the power sector, “modern renewables” (principally wind and solar power) has grown very significantly. Investment in renewable energy generation now accounts for over 80% of new power generation capacity globally, and this is helping to chip away at the share of fossil fuels in the power generation mix. But progress is slow. Wind and solar accounts for approximately 10.2% of electricity generation globally.¹³⁰ However, the growth of wind and solar power is not yet significantly reducing the quantities of coal and gas being used to generate electricity.¹³¹ Overall renewables’ contribution to the energy mix in power generation is growing, but at pace that is very incremental and nowhere near consistent with the Paris targets.¹³²

The global rise in demand for energy has led to a growth in *all* forms of energy supply, and the growth in renewables is having a limited impact on the overall pattern of energy use.¹³³ According to IRENA, “An energy transition requires that the use of renewables expands by more than the growth in energy demand, so that less non-renewable energy needs to be used. Many countries still have not reached this point, despite dramatic increases in their use of renewables for generating electricity.”¹³⁴ Renewables are therefore part of the energy *expansion*, but beyond the power sector they are not playing a significant role in the energy *transition*.

Stagnation and Expansion: Energy Trends in the South

Looking more closely at energy trends in the South, several trends stand out. These include:

1. **Renewables are growing very quickly**, especially in Asia. The region accounted for 60% of new global renewable energy capacity in 2021, increasing its renewable capacity by

¹²⁹ IEA, *Oil 2021: Analysis and forecast to 2026*, March 2021, <https://www.iea.org/reports/oil-2021>

¹³⁰ REN 21, *Renewables 2022 Global Status Report*

¹³¹ Dave Jones, Euan Graham and Pete Tunbridge, “Wind and Solar Now Generate One-Tenth Of Global Electricity: Global half-year electricity analysis,” *Ember*, August 2020, <https://ember-climate.org/project/global-electricity-h12020/>

¹³² IEA *World Energy Investment 2022*

¹³³ According to the United Nations Environment Programme (UNEP) and Bloomberg New Energy Finance (BNEF), “Even though there was a lot of solar and wind capacity installed in the latest decade, its impact on the electricity mix has been gradual, not dramatic.” The share of global electrical power generated during the first half of 2020 by wind and solar capacity was just 10%. Frankfurt School-UNEP Centre/BNEF, *Global Trends in Renewable Energy Investment 2019*, <http://www.fs-unep-centre.org>

¹³⁴

https://irena.org/-/media/Files/IRENA/Agency/Publication/2022/Apr/IRENA_-RE_Capacity_Highlights_2022.pdf?la=en&hash=6122BF5666A36BECD5AAA2050B011ECE255B3BC7

154.7 GW. By way of comparison, capacity in Europe and North America expanded by 39 GW and 38 GW respectively.¹³⁵

2. **Fossil-based energy use is also rising**, also driven by Asia. Fossil fuels accounted for 93 percent of Asia's consumption increase during 2000-14.¹³⁶ This illustrates how renewables can grow quickly in the South, but not in ways that displace the use of fossil-fuels.
3. **Non-OECD countries account for the bulk of the world's current production of fossil fuels.** This includes Russia and the CIS countries and the MENA countries. Non-OECD countries account for 79% of global coal extraction, 73% of oil and 63% of gas.¹³⁷ This means that rising energy demand in the South, if it continues unimpeded, can be met by the South (or non-OECD) countries themselves. However, major economies like China, India and Korea are net importers of fossil-based energy. (See below)¹³⁸ But there is no shortage of coal, oil and gas reserves, especially in Asia.¹³⁹
4. **Energy poverty and a lack of energy capacity persists**, especially in Sub-Saharan Africa. Roughly 860 million people in the Global South still have no access to electricity and an additional 1.1 billion have access, but the supply was intermittent.¹⁴⁰ Africa added just 2.1 GW of renewables in 2021. Today, a third of all humanity lacks access to reliable power.¹⁴¹

¹³⁵

https://irena.org/-/media/Files/IRENA/Agency/Publication/2022/Apr/IRENA_-RE_Capacity_Highlights_2022.pdf?la=en&hash=6122BF5666A36BECD5AAA2050B011ECE255B3BC7

¹³⁶

<https://www.aiib.org/en/policies-strategies/strategies/sustainable-energy-asia/.content/index/download/Energy-Strategy-Discussion-Draft.pdf>

¹³⁷ Based on current oil, gas and coal emissions (Le Quéré et al. 2018), and assuming geographically equal emissions factors, OECD currently extracts fossil fuels equivalent to 9.2 GtCO₂/yr and non-OECD 25.3 GtCO₂/yr. If OECD were to phase out on a straight line within five years and non-OECD within 25 years, the resulting emissions would be 340 GtCO₂, even before considering other sources such as cement and land use change.

¹³⁸

<https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2019-full-report.pdf>

¹³⁹ According to the Asia Infrastructure Investment Bank [2017 data] "More than half of global conventional oil and gas reserves are in Asia: 3,795 trillion cubic feet of gas (55 percent of the world reserves) and 888 billion barrels of oil (54 percent of the world reserves), most of which are concentrated in Western Asia: Saudi Arabia, Iraq, Kuwait, Qatar and United Arab Emirates. In addition, Russia has 1,688 trillion cubic feet of gas (28 percent of the world reserves) and 80 billion barrels of oil (5 percent of world reserves). Asia's coal reserves are also abundant, amounting to more than 369,497 million short tons and representing 38 percent of global reserves, with a high concentration in five countries including: China (34 percent), Australia (23 percent), India (18 percent), Kazakhstan (10 percent) and Indonesia (8 percent). Russia's coal reserves amount to 173,074 million short tons, about 18 percent of the global reserves.

¹⁴⁰ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—Noncommercial 3.0 IGO (CC BY-NC 3.0 IGO).

¹⁴¹ Sustainable Energy for All, 2021

These trends illustrate how the neoliberal approach has, first, been unable to either control the rise in energy demand and emissions levels in the high-growth countries of the South (and here we include China) and, second, shown itself to be unable provide a sufficient supply of clean energy to almost a third of the world's population.

China's Energy Mix: Greener, Browner, Larger

The reality of “energy expansion, not energy transition” is plainly evident in the case of China. Renewable energy has grown impressively, but coal use continues to grow, as does oil and gas consumption.

By 2013 China was already investing more in renewables than any other country, and in 2021 it accounted for 43% of global capacity additions in renewables and the highest clean energy investment levels (\$380 billion).¹⁴² China added 121GW of renewable energy capacity in 2021, of which over 100GW was wind and solar. By the end of 2021, China was the clear global leader in cumulative renewable energy capacity.¹⁴³ China has also emerged as the world's leading manufacturer of solar panels and China accounts for half of the top 10 wind turbine companies.¹⁴⁴

Just a decade ago, in 2012, China had installed a little under 7GW of solar energy. By the end of 2021, it had installed 307GW of solar. Similarly, in 2012, China had installed 61 GW of onshore wind; at the end of 2021 it had installed 303GW (and an additional 26.3 GW of offshore wind.)¹⁴⁵ Despite this phenomenal growth, the share of all renewables in China's electricity mix accounted for a little over 10%.

However, China's coal use is massive. From 1990 to 2019, China's coal consumption nearly quadrupled, and since 2011 China has consumed more coal than the rest of the world combined.¹⁴⁶ The economic slowdown in China in 2014-2015 saw a steep decline in coal use (2.9 percent in 2014 and 3.6 percent in 2015) prompting some analysts (including Nicholas Stern) to declare that China had entered a period of “post-coal growth.”¹⁴⁷ Brookings wrote at

¹⁴² IEA, World Energy Investment 2022

¹⁴³ IRENA highlight doc – [note: cumulative GW # not in REN21 data] followed by the United States (398 GW), Brazil (160 GW), India (158 GW) and Germany (139 GW).

¹⁴⁴ Sean Sweeney, Sustaining the Unsustainable: Why Renewable Energy Companies Are Not Climate Warriors, New Labour Forum, August 2021, <https://newlaborforum.cuny.edu/2021/08/27/sustaining-the-unsustainable-why-renewable-energy-companies-are-not-climate-warriors/>

¹⁴⁵ IRENA (2022), *Renewable Energy Statistics 2022*, The International Renewable Energy Agency, Abu Dhabi

¹⁴⁶ <http://www.stats.gov.cn/tjsj/ndsj/2021/indexeh.htm>

¹⁴⁷ Qi Ye *et al.*, China's Post Coal Growth, *Nature Geoscience* 0 (2016): 564–566, available at <https://doi.org/10.1038/ngeo2777>

the time “there is a decoupling of economic growth from the growth in coal consumption. China’s coal consumption might have in fact already peaked.”¹⁴⁸

In 2021, China accounted for a little over 53% of the world’s coal consumption.¹⁴⁹ As of 2020, coal made up almost 57 percent of China’s energy use. China has become the world’s largest emitter of CO₂ in 2006, surpassing the United States. China’s emissions reached record levels in 2021. China’s energy-related import-export gap is growing as the country seeks energy resources beyond its national boundaries in order to sustain its economic growth. In 2020, China imported around 73% of its crude oil and 60% of its natural gas.¹⁵⁰

India: Rising Coal Use, Not Meeting Renewable Energy Targets

India also illustrates the “expansion, not transition” energy trend. The country has abundant supplies of coal, but India’s rate of economic growth has been such that it is the world’s second largest coal importer, and it mainly imports coal from Indonesia, Australia, South Africa and the US.¹⁵¹ In 2021, India accounted for 21% of the world’s coal consumption, up from 13% a decade earlier.¹⁵² India’s National Energy Policy projects that electricity generating capacity will increase from 125GW (the 2012 baseline) to an estimated 330-441 GW range by 2040, and electricity generated from coal will more than double (and perhaps triple) by 2040.¹⁵³

India is also growing its renewable energy capacity. In 2015, the Indian government announced a target of 175 GW of renewables by 2022 (excluding large hydro), which included 100 GW of solar, of which 40GW would be rooftop solar, and 60 GW of wind capacity.¹⁵⁴ India has said it would install a massive 500GW of renewable energy by or before 2030.¹⁵⁵ But India will fall well

¹⁴⁸ <https://www.brookings.edu/blog/up-front/2016/08/04/the-end-of-coal-fired-growth-in-china/>

¹⁴⁹

<https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf>

¹⁵⁰ China’s international targets are supported by its [Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality](#) and [Action Plan For Carbon Dioxide Peaking Before 2030](#), as well as the 14th Five Year Plan (FYP), which includes energy and carbon intensity reduction targets, as well as energy targets such as non-fossil shares for energy and electricity sectors.<https://climateactiontracker.org/countries/china/>

¹⁵¹

<https://www.newindianexpress.com/business/2022/mar/19/india-imports-17332-million-tonnes-of-coalin-2021-22-plans-to-cut-down-2431831.html>

¹⁵²

<https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf>

¹⁵³ 708 TWh in 2012 to the range of 1,984 -2,606 TWh by 2040. – see shankar email]

¹⁵⁴ Ministry of New and Renewable Energy. 2010. Jawaharlal Nehru National Solar Mission: towards Building Solar India. Mission Document, November. Delhi.

https://mnre.gov.in/sites/default/files/uploads/mission_document_JNNSM.pdf.

¹⁵⁵

<https://economictimes.indiatimes.com/industry/renewables/india-to-achieve-50-clean-energy-share-500-gw-re-capacity-targets-before-2030-deadline-singh/articleshow/87604552.cms>

short of the 2022 renewable energy targets that were set in 2015. By May 2022, wind and solar installations were around 98GW, falling far short of the 175GW by 2022 target.¹⁵⁶

Wind and solar account for roughly 7% of India's electricity generation, and coal share is 70%. Between 2015-2019 period, 58 GW of new coal-fired power came online, outstripping new wind and solar generation by a ratio of roughly three to one.¹⁵⁷

From the above we can see that renewable energy in Asia (led by China and India) has grown very significantly. However, the expansion in energy demand is still mostly being met by coal and gas. This is true in the power sector as well as industrial and transport sectors.¹⁵⁸

Re-carbonisation? The Case of Bangladesh

TUED's critique of neoliberal climate policy has pointed to the incremental growth of renewable energy at the global level. In the context of the energy expansion, incremental growth in percentage terms still adds up to growing power sector emissions because the use of coal and gas for power generation is also growing in absolute terms.

Wind and solar currently account for roughly 7% of India's electricity generation, and coal's share is 70% and may rise even further. As the IEA notes, "The rise in installed coal-fired capacity was in fact higher [in India] than that of solar and wind over the 2015-19 period (58 GW coal thermal capacity installed versus 49 GW solar and wind)."¹⁵⁹ The share of all renewables in China's electricity production accounted for a little over 10% by the end of 2021, but the country consumes more coal than the rest of the world combined.¹⁶⁰

But in some countries both the *proportion* and volumes of coal and gas use is actually growing. This is due to the slowdown in deployment of hydroelectric and nuclear power (for example, in Vietnam, Indonesia and Pakistan) which means that growing energy demand is increasingly being met by coal and gas. (See the subsection on Pakistan, below.)

Bangladesh provides perhaps the clearest example of "recarbonisation." Gas- and coal-fired power currently accounts for roughly 94% of electricity generated, and the country imports 4% of its electricity from India (which is mostly coal-fired power). Just 2%-3% of Bangladesh's

¹⁵⁶ <https://www.renewablesindia.in/>

¹⁵⁷ IEA, India Energy Outlook, 202, page 38, states that wind and solar capacity additions totaled 49GW. As a rule of thumb, per MW of installed capacity, new coal-fired power stations generate on average more than 3 times that generated by wind and 4 times that of solar on an annual basis, which makes new coal's "lead" over renewables very wide indeed.

¹⁵⁸ <https://www.worldcoal.org/installed-coal-generation-capacity-countryregion-1>

¹⁵⁹ Between 2015-2019 period, 58 GW of new coal-fired power came online in India, outstripping new wind and solar generation by roughly three to one, when different capacity factors are considered. Rather than ask tough questions about the Indian government to reach its 2022 renewable energy targets, it hails the 7% as "a major success story."

¹⁶⁰ IRENA, highlights 2021

electricity comes from wind and solar power.¹⁶¹ But the amount of coal-fired capacity under construction in Bangladesh suggests that its power sector could continue to become even more carbon intensive in future, not less.

From a climate perspective, the growth of energy use across Asia (and other parts of the South) poses a massive challenge. In 2015 the UN adopted the 2030 Agenda and the Sustainable Development Goals (SDGs). Consisting of 17 goals, SDG #7 calls for, by 2030, “universal access to affordable, reliable, sustainable and modern energy for all, along with urgent action to increase substantially the share of renewable energy and double the rate of improvement in energy efficiency.”¹⁶² What is happening now is the expansion of access through the extension of grid power generated mostly by burning coal and gas, with renewable energy playing a relatively small role at this stage. In countries that have made relatively ambitious commitments to renewable energy—such as India and China—wind and solar makes a limited contribution to electricity production.

The Investment Deficit in the South

The lack of investment in the energy transition and economy-wide decarbonisation is a global reality of immense significance.¹⁶³ As the IEA noted recently, “There are few signs of the major shift of capital towards efficiency, renewables and innovative technologies that are needed to turn emissions around.... Investment and financing decisions are shaped by policies: today’s frameworks are not yet equipped to avoid multiple risks for the future.”¹⁶⁴

Overall, investment in the energy transition continues to be well below the levels required to reach the Paris targets. Investment in renewables has increased, but nearly all of it is the result of government policies that guarantee profits and long-term sources of revenue for private concerns. According to the International Renewable Energy Association (IRENA) power sector investment in new renewable capacity globally (mainly wind and solar) needs to total \$22.5 trillion by 2050.¹⁶⁵ That equates to around \$662 billion each year, every year — roughly double the levels of annual investment seen in recent years. In other words, the current approach to

¹⁶¹ <https://energytracker.asia/the-state-of-renewable-energy-in-bangladesh/>

See also: Kumar Biswajit Debnath & Monjur Mourshed (2022) Why is Bangladesh’s electricity generation heading towards a GHG emissions-intensive future?, *Carbon Management*, 13:1, 216-237, DOI:

[10.1080/17583004.2022.2068454](https://doi.org/10.1080/17583004.2022.2068454); <https://ember-climate.org/insights/research/global-electricity-h12020/>

¹⁶² SDG7 is really 4 goals in 1, universal electricity access (7.1.1), clean cooking access (7.1.2), renewable energy (7.2) and energy efficiency (7.3). See: <https://www.un.org/sustainabledevelopment/development-agenda/>

¹⁶³ See <https://www.iea.org/reports/world-energy-investment-2019> : “Current market and policy signals are not incentivising the major reallocation of capital to low-carbon power and efficiency that would align with a sustainable energy future. In the absence of such a shift, there is a growing possibility that investment in fuel supply will also fall short of what is needed to satisfy growing demand. And to meet sustainable development goals, much more investment is needed in the regions that face the highest economic and financial constraints, such as in sub-Saharan Africa.

¹⁶⁴ IEA, *World Energy Investment 2019: Webinar*, 14 May 2019, <https://youtu.be/ZuVjHW7n5k>.

¹⁶⁵ IRENA, *Transforming the energy system*, September 2019, ISBN: 978-92-9260-149-2, <https://www.irena.org/publications/2019/Sep/Transforming-the-energy-system>

mobilizing capital investment to address climate change is failing and has been failing for some time. It is also increasing burdensome on public budgets and amounts to a transfer of money from public to private hands. This is a global phenomenon that is observable in rich, middle-income, and poor countries alike.

However, the investment deficit is particularly severe in the case of many of the poorer countries of the South, such as those in Sub-Saharan Africa (SSA). According to the IEA, the deficit in large parts of the South is increasing, not decreasing: “Developing and emerging economies account for two-thirds of the world’s population but only one-fifth of investment in clean energy – and just one-tenth of global financial wealth. Annual investments across all parts of the energy sector in developing and emerging markets have fallen by around 20% since 2016, in part because of some persistent challenges in mobilising finance for clean energy projects.”¹⁶⁶

In SSA, efforts to attract private investment in the renewables sector have produced meagre results, and the North is pushing privatisation in the hope that the private sector will show more interest in meeting SSA’s energy capacity crisis. African countries have been encouraged to join the Energy Charter Treaty (ECT) which operates on the premise that future energy-related investment will mostly come from private sector interests based in the wealthy countries of the North. But for this to happen, investors will require legally binding guarantees that can protect their investments from changes in government policy. In the words of the ECT Secretariat, “How can we reassure foreign private capital that investing in Africa is worth the hassle?”¹⁶⁷ The ECT, suggests the Secretariat, provides the answer. But it is an answer that will require countries to surrender their policy sovereignty and suspend their democratic processes in an attempt to meet energy-related investment needs—an attempt that, based on recent history, is very likely to fail.

Persistent Energy Poverty, Lack of Capacity (especially in Africa)

Energy poverty remains a serious challenge in the South. In 2021 roughly 860 million people in the South still had no access to electricity and an additional 1.1 billion had access, but the supply was intermittent.¹⁶⁸ Today, a third of all humanity lacks access to reliable power. Roughly 2.6 billion people heat their homes with polluting fuels and technologies, and using traditional stoves fuelled by charcoal, coal, crop waste, dung, kerosene, and wood.¹⁶⁹ The majority of families in the global South are today able to turn on an electric light—and therefore have “access to electricity” for at least some hours in the day—but for many that’s as far as it goes.

¹⁶⁶ IEA Special Report, Financing Clean Energy Transitions in Emerging and Developing Economies (EMDEs) | [Special Report](#)

¹⁶⁷ https://www.energycharter.org/fileadmin/DocumentsMedia/Infographics/2015_Energy_Charter_And_Africa.pdf

¹⁶⁸ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

¹⁶⁹ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

For everything else dirty and perhaps life-threatening energy continues to be the norm.¹⁷⁰ Access to electricity *is* growing in the South, but it is mostly by generating fossil-based energy.

Energy poverty is particularly acute in Sub-Saharan Africa (SSA). In 2017, 573 million people in SSA (roughly 53% of the population) lacked access to electricity.¹⁷¹ For every 10 people in the world without electricity, seven live in the SSA region. Due to population growth, today there are more people without electricity in SSA than was the case in 1990.¹⁷²

During the Covid19 pandemic, energy poverty has increased as a significant portion of those with access to electricity have found it more difficult to pay for it.¹⁷³ According to Sustainable Energy for All, “Without more progressive policy and investment...many African countries will see an increase in their unelectrified populations by 2030.”¹⁷⁴

The growth of renewables in SSA is extremely slow. If we look at the recent data on renewable energy deployment in SSA, it becomes clear that the levels of installed wind and solar capacity barely register. By the end of 2019, only 7.4GW of solar energy and 5.7GW of wind power was operational *in the entire continent*.¹⁷⁵ Meanwhile Asia has installed 258GW of wind power and Europe 195GW. Spain has installed more wind and solar capacity than 48 sub-Saharan African countries combined. Per capita power consumption in SSA, at 124 kilowatt-hours annually and falling, is only 10 percent of that found elsewhere in the developing world barely enough to power one 100-watt lightbulb per person for three hours a day. [source needed]. As noted above, just 2.1 GW of wind and solar were installed in the entire continent of Africa in 2021.

With population increases factored in, an estimated 940 million people will have to be connected globally by 2030 if the 100% access goal of SDG7 is to be achieved. Based on existing policies (what the IEA calls the *Stated Policies Scenario*) some 660 million people will still lack access in 2030. To meet SDG7, “The access rate will have to more than triple between now and 2030. In Sub-Saharan Africa alone, this would mean connecting around 85 million people each

¹⁷⁰<https://static1.squarespace.com/static/5d371cb401986300013881d3/t/5fd2da665cb14268c384c788/160765400062/GCEEP-ALLReports-Full-2020-3.pdf>; The World Health Organization (WHO) estimates that indoor pollution contributes to 3.8 million deaths each year in low- and middle-income countries, with women and children (who are usually home more than men) disproportionately impacted. Global Commission to End Energy Poverty, 2020 Report WHO (World Health Organization). 2021. “Global Health Observatory.” World Health Organization, Geneva. <https://www.who.int/data/gho/data/themes/air-pollution/household-air-pollution>.

¹⁷¹ World Bank. (May 22 2019) ‘Energy Progress Report 2019’. Available at:

<https://www.worldbank.org/en/news/press-release/2019/05/22/tracking-sdg7-the-energy-progress-report-2019> (retrieved 22 June 2020).

¹⁷² World Bank. (May 22 2019) ‘Energy Progress Report 2019’.

¹⁷³ <https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf>; IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

¹⁷⁴ <https://www.seforall.org/system/files/2021-08/Analysis-SDG7-Progress-2021.pdf> On-line document, unpaginated

¹⁷⁵ Institute for Developments Studies, The African Climate Foundation, and The Open University, Scaling China’s Green Energy Investment in Sub-Saharan Africa: Challenges and Prospects, Nov 2021, Executive Summary. This report was funded by NRDC.

year through 2030.”¹⁷⁶ Current policies, state the IEA, will “fail to deliver full access to energy for all or to provide a substantial improvement in air quality.”¹⁷⁷

Overall, the overwhelming majority of people gaining access to electricity during the past decades did so because of a massive increase in centralized power generation. In China and India, renewable energy has made a significant contribution to the effort to reach universal access. However, looking at the electrification data elsewhere in Asia, the contribution of renewables to extending access has been far less significant. For example, Indonesia has achieved 97% electrification, but the amount of wind and solar power installed barely registers (less than 1% of electricity supply).¹⁷⁸ Malaysia, Philippines, Singapore, Brunei Darussalam, Lao, Myanmar, Cambodia have each installed less than 2GW modern renewables (although Thailand has reached almost 4GW). This means that universal access, while not yet at 100%, is being attained almost entirely by expanding fossil fuel use.

The Legacy of Undermining Public Power in SSA: Lack of Capacity

Fourteen years ago, in 2008, a World Bank report noted that the combined electricity generation capacity of the 48 countries of SSA was less than that of Spain. Remove relatively well-developed South Africa from the picture and the generation capacity barely matched that of Argentina, a country that at the time had a population of under 40 million.¹⁷⁹ SSA’s population in the mid-2000s was roughly 750 million and has now passed the 1 billion mark.

Importantly, the report attributed Africa’s energy crisis to the unwillingness of governments to follow the neoliberal energy reform agenda. Expressing disapproval, it noted, “Nowhere in Sub-Saharan Africa does one encounter the standard reform model, that is, unbundling, privatization, and wholesale and retail competition ... Nowhere in Sub-Saharan Africa do residential or commercial and industrial customers pay full cost-recovery prices, a mixed legacy of subsidies based on concern for the poor and outdated industrial policy.”¹⁸⁰

¹⁷⁶ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO). Main Messages, page 2

¹⁷⁷ International Energy Agency, 2019. *World Energy Outlook 2019*.

<https://www.iea.org/reports/world-energy-outlook-2019>

¹⁷⁸ https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Indonesia_Asia_RE_SP.pdf

¹⁷⁹ World Bank, May 2006: Underpowered: The State of the Power Sector in Sub-Saharan Africa

Anton Eberhard, Vivien Foster, Cecilia Briceño-Garmendia, Fatimata Ouedraogo, Daniel Camos, and Maria Shkaratan

<https://openknowledge.worldbank.org/bitstream/handle/10986/7833/482140ESW0P11110Power0Sector0Review.pdf?sequence=1&isAllowed=y>

¹⁸⁰ World Bank, May 2006: Underpowered: The State of the Power Sector in Sub-Saharan Africa

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The World Bank concluded that energy poverty would persist until utilities could “fully cover operating costs and at least some share of capital costs.” The neoliberal idea of “full cost recovery” was, and remains, the Bank’s (and the IMF’s) main metric of viability.¹⁸¹ States were advised that, in order to attract foreign direct investment (FDI), market liberalization was essential. To survive, utilities would need to show that they were competitive with private energy producers.¹⁸²

However, the Bank’s standard model did not anticipate the need to subsidize independent power producers (IPPs) in the renewables sector. TUED’s research has shown how these subsidies (or “out of market protections”) plunged many utilities into what the energy policy world a “death spiral.” As the IPPs cut into the market share of the national companies, the utilities lose revenue.¹⁸³ When those same utilities fail to meet full cost recovery benchmarks, they are declared too much of a “financial risk” to attract private investors. Credit ratings deteriorate, public investment in new capacity declines, and maintenance and modernization are neglected. Therefore the traditional engines of electrification (the national utilities) are unable to complete the task that they were set up to accomplish, which was to extend access as a means to advance human and economic development.

Seemingly oblivious to the fact that their policies might have contributed to SSA’s energy poverty and lack of capacity, the World Bank and its regional body, the Africa Development Bank (AfDB) continue to promote the idea that market reforms are needed to attract private investment. According to the AfDB, “The lack of funding for the power sector in Africa is often because investment options are nonexistent rather than a shortage of capital. Market entry in the sector can be facilitated through the structural separation of generation, transmission, and distribution, which is lacking on the continent.”¹⁸⁴ In other words, integrated national utilities should be broken up, or “unbundled.”¹⁸⁵

This anti-public “green structural adjustment” message continues to be reinforced by a host of corporate-dominated “multistakeholder groups” and multilateral agencies. The Compact with Africa sees its role as “linking private financing of infrastructure with regulatory reforms.”¹⁸⁶ The

¹⁸¹ In other words, the costs of providing the service must be covered by those who use the service

¹⁸² World Bank, May 2006: Underpowered: The State of the Power Sector in Sub-Saharan Africa

Anton Eberhard, Vivien Foster, Cecilia Briceño-Garmendia, Fatimata Ouedraogo, Daniel Camos, and Maria

Shkaratan <https://openknowledge.worldbank.org/bitstream/handle/10986/7833/482140ESWOP11110Power0SectorReview.pdf?sequence=1&isAllowed=y>

¹⁸³ NUM, NUMSA, SAFTU, AIDC, TUED, TNI: Eskom Transformed: Achieving a Just Energy Transition for South Africa.

TUED and TNI: Energy Transition or Energy Expansion?

¹⁸⁴ Leapfrogging : the key to Africa’s development - from constraints to investment opportunities,

<https://documents1.worldbank.org/curated/en/121581505973379739/pdf/Leapfrogging-the-key-to-Africas-development-from-constraints-to-investment-opportunities.pdf>

¹⁸⁵

<https://www.afdb.org/en/news-and-events/policy-reforms-and-investment-needed-to-curb-the-shortfall-in-africas-energy-sector-13938>

¹⁸⁶ <https://blogs.worldbank.org/nasikiliza/compact-with-africa-linking-policy-reforms-with-private-investment>

Africa Renewable Energy Initiative notes how “International private sector players are entering the African renewable energy space” and should be welcomed with open arms.¹⁸⁷ The African Climate Foundation urges African governments to “open up the generation, distribution and transmission sectors to private players using auction-based project delivery mechanisms” as a means to address “the lack of a conducive environment for private players”¹⁸⁸ And the recent COP26 Agreement between the US, the EU and South Africa dangles the possibility of “concessional” financing while endorsing the ANC’s efforts to further privatizing the national energy system.¹⁸⁹

South Africa’s Energy Policy Disaster

In SSA, South Africa is the exception in that, as the most developed economy in the region, it had reached a high level of access to electricity compared to other SSA countries. However, prior to the fall of Apartheid, the national utility (Eskom), although publicly owned, mainly served large mining and chemical sectors and universal access was never a policy priority. At the end of 1993, just 36% of the population, and only 12% of rural dwellers, had access to grid electricity.

In the mid-1990s, the ANC government instructed Eskom to extend access, and both the utility and the ruling party knew full well that the recipients of electricity would not be able to pay for the full cost of the service. In line with international experience, the government believed that the costs of electrification would be more than offset by the gains made in terms of improved education, public health, and labour productivity. Between 1994 and 2000 Eskom succeeded in adding 2.5 million households to the grid, with more being connected by local government. By 1999, Eskom and local authorities had, in percentage terms, increased electrification from 31% to around 66%.¹⁹⁰

But just as electrification was advancing, the ANC pivoted away from its earlier commitment to socialist economic planning and embraced the neoliberal agenda. A 1998 White Paper laid out a series of proposals to reform Eskom. The utility would be “unbundled;” 30% of its generation capacity would be sold, and the private sector would build all new generation capacity. In 2001,

¹⁸⁷ Africa Renewable Energy Initiative, A framework for transforming Africa towards a renewable energy powered future with access for all. <http://www.arei.org/wp-content/uploads/2018/09/AREI-Framework.pdf>

¹⁸⁸ Institute for Development Studies, The African Climate Foundation, and The Open University, Scaling China’s Green Energy Investment in Sub-Saharan Africa: Challenges and Prospects, Nov 2021, Executive Summary. This report was funded by NRDC.

¹⁸⁹ Political Declaration on the Just Energy Transition in South Africa: Declaration from the Governments of the Republic of South Africa, the United Kingdom of Great Britain and Northern Ireland, the United States of America, the Republic of France and the Federal Republic of Germany, and the European Union.

¹⁹⁰ Electrification may alleviate poverty, but it does not eradicate it. Poorer urban homes in South Africa spend between 12% and 20% of household income on energy. In terms of Eskom’s finances, these levels of poverty meant that only a fraction of the costs of electrification was recovered through electricity payments by users. Department Minerals and Energy (DME), RSA. (November 2001) *National Electrification Programme (NEP) 1994-1999, Summary Evaluation Report*. Pretoria: DME. Available at: http://www.energy.gov.za/files/media/explained/statistics_electrification_2001.pdf (retrieved 20 June 2020). See also

the government explicitly mandated that Eskom “not [be] allowed to invest in new generation in the domestic market... to ensure meaningful participation of the private sector in electricity in the medium term.”¹⁹¹ All decisions for new generation capacity were handed over to the Department of Minerals and Energy (DME).

South Africa had no previous experience of creating the conditions for private sector investments or dealing with independent power producers (IPPs.) According to one account, government’s plans “necessitated the immediate creation of a market that did not yet exist and the creation and maintenance of market conditions that would facilitate the functioning of such a market. Instead of Eskom issuing tenders for construction of plants, conditions would need to be created for the private sector to invest in these plants.”¹⁹²

In April 2004 Eskom (still publicly owned) warned that new capacity was needed in order to meet growing demand, otherwise “load shedding” (power cuts) would be inevitable in the years ahead. Yet no IPPs were contracted by the DME, but Eskom was still prohibited from investing in any new construction.

The government later reversed its decision to exclude Eskom from investing in new capacity. But it was already too late given the almost 10-year lead times to build large-scale coal-fired power stations. The best Eskom could do was to build new capacity as fast as it could. The investment decision to build the massive 4,800MW Medupi coal-fired power station was made by Eskom in 2005. In 2008 Eskom reported: “The capacity shortages were foreseen... Problems (such as wet coal) that would previously have had little or no impact on supply due to adequate reserves now result in major consequences for customers.”¹⁹³ South Africa’s economy and its people have endured years of power cuts because of a catastrophic policy error, grid extensions have been halted, and the energy poverty is increasing.¹⁹⁴

A Model for the South? The “International Just Energy Transition Partnership with South Africa.”

Meanwhile, the *International Just Energy Transition Partnership with South Africa* was unveiled on November 2nd, 2021 at COP26 in Glasgow. France, Germany, UK, US and EU made commitments to support South Africa’s “move away from coal and to accelerate its transition to a low emission, climate resilient economy.” The partnership will, it is claimed, “mobilize an initial commitment of \$8.5 billion for the first phase of financing, through various mechanisms

¹⁹¹ DME Cabinet Memorandum April 2001, quoted in Newbery & Eberhard, 2008.

¹⁹² Trollip, H., Butler, A., Burton, J., Caetano, T., Godinho, C (2014) Energy Security in South Africa. Cape Town, MAPS

¹⁹³ Eskom quoted in NERSA 2008, p 41. NERSA 2008. Inquiry into the National Electricity Supply Shortage and Load Shedding. National Energy Regulator of South Africa. See also: Trollip, H., Butler, A., Burton, J., Caetano, T., Godinho, C (2014) Energy Security in South Africa. Cape Town, MAPS

¹⁹⁴ AIDC/TUED/TNI Eskom Transformed 2020.

including grants, concessional loans and investments and risk sharing instruments, including to mobilize the private sector.”¹⁹⁵

The official statement captures the main dimensions of the green structural adjustment being pushed by neoliberal institutions. In plain sight, it identified the need to “create an enabling environment through policy reform on the electricity sector, such as unbundling and improved revenue collection.”¹⁹⁶ The “deal” with South Africa reflects the thinking and policies that continue to dominate elite-level climate discussions. It dangles the possibility of “concessional” financing while endorsing the South African government’s effort to further privatize the national energy system.¹⁹⁷

Today, the World Bank and its regional body, the Africa Development Bank (AfDB) continue to promote the idea that privatization and liberalization will “unlock” private investment, and that “Market entry in the [electricity] sector can be facilitated through the structural separation of generation, transmission, and distribution, which is lacking on the continent.”¹⁹⁸ In other words, integrated national utilities of the continent should be broken up (“unbundled”) in order to catch the eye of private investors.¹⁹⁹

Following COP26, IMF representatives began their discussions with the government of South Africa and private sector interests. The IMF’s recommendations called for the breaking up of the national utility (Eskom), the laying off of power sector workers, and the need to achieve “full

¹⁹⁵ Political Declaration on the Just Energy Transition in South Africa: Declaration from the Governments of the Republic of South Africa, the United Kingdom of Great Britain and Northern Ireland, the United States of America, the Republic of France and the Federal Republic of Germany, and the European Union.

¹⁹⁶ Political Declaration on the Just Energy Transition in South Africa: Declaration from the Governments of the Republic of South Africa, the United Kingdom of Great Britain and Northern Ireland, the United States of America, the Republic of France and the Federal Republic of Germany, and the European Union. See also: <https://www.g7germany.de/resource/blob/974430/2057418/9a1d62b3c5710b4c1989f95b38dc172c/2022-06-27-chairs-summary-climate-neutrality-data.pdf>

¹⁹⁷ European Commission, Political Declaration on the Just Energy Transition in South Africa, Nov 2, 2021

¹⁹⁸ Leapfrogging : the key to Africa's development - from constraints to investment opportunities, <https://documents1.worldbank.org/curated/en/121581505973379739/pdf/Leapfrogging-the-key-to-Africas-development-from-constraints-to-investment-opportunities.pdf>

¹⁹⁹ See:

<https://www.afdb.org/en/news-and-events/policy-reforms-and-investment-needed-to-curb-the-shortfall-in-africas-energy-sector-13938> The “green structural adjustment” message is routinely reinforced by a host of Africa-focused corporate-dominated “multistakeholder groups” and various multilateral agencies. The Compact with Africa sees its role as “linking private financing of infrastructure with regulatory reforms.” See:

<https://blogs.worldbank.org/nasikiliza/compact-with-africa-linking-policy-reforms-with-private-investment>. The Africa Renewable Energy Initiative notes how “International private sector players are entering the African renewable energy space” and should be welcomed with open arms. See: Africa Renewable Energy Initiative, A framework for transforming Africa towards a renewable energy powered future with access for all.

<http://www.arei.org/wp-content/uploads/2018/09/AREI-Framework.pdf>. The African Climate Foundation urges African governments to “open up the generation, distribution and transmission sectors to private players.” See: Institute for Development Studies, The African Climate Foundation, and The Open University, Scaling China’s Green Energy Investment in Sub-Saharan Africa: Challenges and Prospects, Nov 2021, Executive Summary.

cost recovery.”²⁰⁰ The IMF added, “Competition from private firms is necessary. The resulting higher level of private investment should help finance the energy transition away from coal, contributing to climate change objectives.”²⁰¹

The South African government has pointed to what it sees as the significance of the Glasgow deal. Daniel Mminele, head of the Presidential Climate Finance Task Team, noted how many countries were “keenly watching and hoping that South Africa will set a precedent for how to engage international climate resources to support a just transition.” He continued: “It is important to mention that this is an *initial* amount, and as a country, we recognise that the transition costs for South Africa are immense.” Nevertheless, “the Partnership holds catalytic potential to mobilize critical future funding.”²⁰²

A Just Energy Transition Partnership for Vietnam

The JETP is today being pushed in other countries. In August 2022, COP27 President and UK Conservative Party minister Alok Sharma announced a JETP for Vietnam, which he said would offer “clear plans to deliver a just energy transition and catalyze clean energy investment, offering Viet Nam the opportunity to become a world leader in renewable energy.”²⁰³ However, Vietnam epitomises the phenomenon of energy expansion, not transition. The country’s eighth power development plan (PDP8) proposed up to 20GW of solar and 19GW of wind by 2030, but it also proposed 22 GW of gas and 37 GW of coal-fired capacity by 2030.²⁰⁴

Aside from illustrating energy expansion, Vietnam also illustrates the contradictions of the current growth model. More than any country in Southeast Asia, Vietnam has become and export platform for large multinationals. Nearly 60% of the country’s exports are manufactured goods produced in factories belonging to foreign investors. According to IEEFA, “Big corporations such as Samsung and Intel set up shop in Vietnam almost two decades ago,

²⁰⁰ The restructuring and unbundling of Eskom “must be accompanied by a substantial downsizing and structural transformation of its operations, notably through a meaningful reduction of procurement and personnel costs.”
<https://www.imf.org/en/News/Articles/2021/12/07/south-africa-staff-concluding-statement-of-the-2021-article-iv-mission>

²⁰¹

<https://www.imf.org/en/News/Articles/2021/12/07/south-africa-staff-concluding-statement-of-the-2021-article-iv-mission>

²⁰² Keynote address by Mr Daniel Mminele, Head: Presidential Climate Finance Task Team, at the Policy Discussion on Just Transition Finance, convened by MISTRA, 09 May 2022,
<https://mistra.org.za/mistra-media/daniel-mminele-address-at-just-transition-finance-policy-discussion/>

²⁰³

<https://www.gov.uk/government/news/alok-sharma-cop26-president-returns-to-viet-nam-to-drive-progress-on-a-clean-energy-transition-ahead-of-cop27>
<https://blogs.idos-research.de/2022/09/21/just-energy-transition-partnerships-boosting-international-climate-cooperation/>

²⁰⁴ *Draft PDP8 outlines Vietnam’s future power supply strategy centered around gas and LNG*
<https://ihsmarkit.com/research-analysis/draft-pdp8-outlines-vietnams-future-power-supply-strategy-cent.html>

gradually turning local industrial parks into their global production base. Others, such as Apple or Nike, in the meantime, have been sourcing from a network of local suppliers, typically also foreign owned, that assemble products shipped to consumers worldwide.”²⁰⁵

To sustain this model of growth, Vietnam has taken an energy “by any means necessary” approach. But in this case there are signs that green structural adjustment may well be making Vietnam more carbon intensive, not less. In July 2021 the Global Wind Energy Council (GWEC)—which represents large wind energy companies—insisted that the government of Vietnam establish capacity auctions for offshore wind (OSW), but warned that Vietnam needed to “improve PPA [power purchase agreement] bankability” if it wanted to attract investors from abroad. The GWEC complained that Vietnam’s template PPA “does not follow international standards, particularly around: grid delay and the commissioning risks incurred; curtailment and compensation mechanism; currency conversion risks; protection from change in law; forums for international dispute.” Therefore “foreign investors are not confident to proceed under the current terms.”²⁰⁶

Again, we see that large renewable energy companies are laying down onerous conditions or demands that would inflict costs on either the government of Vietnam, the national utility, or both. Without stating the reason, in September 2021 Vietnam amended its 8th Power Development Plan (PDP8) and cancelled its offshore wind program, dramatically scaled-down its solar commitments, and indicated that the country would pivot back towards coal.²⁰⁷ Citing the fact that more major banks and insurers in Asia have stated that they would not finance new coal projects, environmental policy groups warned that Vietnam may struggle to get new coal projects financed.²⁰⁸ How firm these commitments not to finance new coal projects turn out to be remains to be seen. Climate commitments and statements of ambition may be genuine in terms of their intent and issued in the hope of “sending signals” to energy markets, but energy markets have been sending signals of their own in the form of increasing levels of fossil fuel extraction and use.²⁰⁹

[note to editor: cop27 update here]

Towards a *Public Pathway*

Part One explained how neoliberal policy has produced *systemic* outcomes marked by rising energy use spurred on by trade and financial liberalization. It has also produced *specific*

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https://ieefa.org/wp-content/uploads/2021/09/Vietnam-PDP8-Signals-Policy-Confusion-About-the-Economics_Thu_Vu_Sept_2021.pdf

²⁰⁶ Vietnam’s Future Transition to Offshore Wind Auctions - International Best Practices and Lessons Learned. Global Wind Energy Council. [July] 2021

²⁰⁷ <https://energytracker.asia/the-proposed-vietnam-pdp8-update-and-the-risks-from-the-coal-pivot/>

²⁰⁸

https://ieefa.org/wp-content/uploads/2021/09/Vietnam-PDP8-Signals-Policy-Confusion-About-the-Economics_Thu_Vu_Sept_2021.pdf

²⁰⁹ <https://chinadialogue.net/en/energy/chinas-no-new-coal-power-overseas-pledge-one-year-on/>

outcomes that are directly attributable to climate and energy transition policies. Part One also noted the deep contradictions that lies at the heart of the neoliberal approach. Because the “green” policies were designed to be consistent with the core neoliberal agenda and its emphasis on “growth,” these policies were always likely to be ineffective. This ineffectiveness is today glaringly revealed in energy and emissions trends and projections.

Part Two: The Public Pathway Alternative: Addressing Energy Poverty and Demand Expansion

Part Two of this framing document will consider how trade unions can begin to offer a *public pathway* alternative to the current neoliberal “green growth” model for energy transition and climate protection. It proposes that the alternative must be built around reclaimed and demarketized public electricity companies (or power utilities). The crucial role of both the power sector and reclaimed power utilities is explained below.

The approach will require the *decommodification* of electricity and a new mandate for public energy companies. This “mandate shift” must combine a traditional public service mission with a social license to advance an economy-wide decarbonization agenda in ways that are accountable, transparent, can create opportunities for stable employment, skills training and an appropriate degree of worker-community control.

Public ownership and control must also be extended to essential supply chains, particularly the key technology suppliers for renewables, battery storage, nuclear, carbon capture, and hydrogen. These “markets” (all of which are sustained by public subsidies) are highly concentrated and based in a small handful of countries. These levels of market concentration means that the future of the energy transition is currently controlled by a few dozen multinational companies with “maybe yes, maybe no” veto power in terms of investment and deployment. None of the major market players are based in the Global South. Meanwhile, promising technologies should be vigorously interrogated in order to discover their true potential to advance social and ecological goals.

It is not possible to discuss these issues adequately here. It was noted above that the *Trade Union Program for a Public, Low Carbon, Energy Future* that was launched at COP26 in Glasgow in November 2021 proposed a template for a *public pathway* approach to energy transition that focuses on the power sector. The *Program*, and the forthcoming report of *Trade Union Task Force for a Public Energy Future*, takes an in-depth look at the potential role of utilities in driving the transition and advancing an economy-wide decarbonization.²¹⁰ Many areas of the both the Trade Union Program and the (forthcoming) report of the Task Force are directly applicable to the challenges facing the South, but these challenges warrant a far more detailed analysis and discussion in terms of what, exactly, a *public pathway* might be able to deliver in terms of meeting the challenges of energy *stagnation* and poverty in some parts of the South,

²¹⁰ Report of the Trade Union Task Force for a Public Energy Future, forthcoming, 2023

particularly sub-Saharan Africa, and the kind of energy *expansion* exemplified by the high-growth Asian economies.

We recognize that the failures of the neoliberal approach do not guarantee that the *public pathway* idea will produce better outcomes. We therefore need to develop plausible ways of addressing the chronic levels of energy poverty and capacity stagnation in areas of the world that are currently energy poor. These solutions are not fanciful; they are plausible. But we need to be fully cognizant of the technical as well as financial challenges involved in advancing electrification, especially if one of the goals of the *public pathway* is to avoid using fossil fuels as the primary source of power.

We must also show how reclaimed and demarketized power utilities can do something to impede and perhaps reverse the energy expansion that was documented in Part One. If addressing energy poverty is formidable, arresting the growth of energy demand is a much larger and more complex and economy-wide task for which there are few tried and tested policy tools available.

In contrast to sub-Saharan Africa where the need for reliable electricity is clear and pressing for hundreds of millions of people, many countries in the South are, or will soon become, middle-income countries with close to 100% access to electricity, a growing industrial and commercial sector, and a rising middle class. Today, most of electricity generated in the major developing countries is for industrial and commercial purposes. For example, India's domestic use accounts for just 26% of total energy consumption, whereas industrial and commercial use in almost 50%.²¹¹ We have seen how the "core agenda" of neoliberal policy feeds the energy expansion, but what will it take to control it? In the case of the energy poor countries, the train is stuck in the station for want of fuel and the passengers are frustrated. However, in the case of the high-growth economies, the train has left the station and is careering down the tracks, and many of the passengers seem to be enjoying the ride. A *public pathway* approach must somehow offer plausible ways to impede the energy expansion while progressively decarbonising energy supply. This is probably the biggest challenge facing the global effort to address the threat of climate change.

Part Two is divided into several sections.

In the first section, we briefly will explain why a *comprehensive reclaiming* of power sector is crucial to the *public pathway* approach, and how the power utilities, once fully public and operating under a new mandate, can begin to address the challenges discussed above.

In second section, we turn to the issue of energy poverty and how to address the lack of investment in the energy transition in many parts of the South, including many middle-income countries. Here we pull apart both the thinking and the fruitlessness "green structural adjustment" and "blended finance" as policies designed to "unlock" investment. We argue that

²¹¹ <https://www.statista.com/statistics/1130112/india-electricity-consumption-share-by-sector/>

a truly just energy transition needs to be adequately financed, and development finance should be directed away from futile attempts to “unlock” private investments. Instead it should be turned towards reclaiming and restoring public utilities. Again, we need to be clear in terms of the extent of reforms in the global financial system that is required, reforms that must go further than meeting higher levels of “climate finance.”

The second section will take on issues of finance. Reform of global finance is essential, but development finance should be used to reclaim and restore public energy systems, thus ending the current policy that continues to undermine national utilities both politically and economically.

The third section will lay out, in broad terms, the accomplishments of public energy systems, both prior to the neoliberal reforms that began in the 1980s and much more recently (in Ecuador, Pakistan, and potentially Mexico). This history is important because it will allow us to learn from the past while countering the impact of decades of neoliberal propaganda against public energy systems.

This section also re-examines the thinking behind the World Bank’s push for privatization and structural adjustment, and how development aid was used as a coercive instrument. The point here is not to re-tell the story of structural adjustment and the damage it caused; rather, the purpose is to show that public energy systems played an important role in the pre-neoliberal period; that market “reforms” were unnecessary and ultimately destructive, and how many public systems have largely survived the wave of privatization. Once reclaimed and fully restored, public utilities can play an even more important role in the future.

The fourth section notes how a growing number of mainstream voices are beginning to recognize that state-owned enterprises (SOEs) may be essential to the effort to reach climate targets, not least because, long before neoliberal policies attempted to turn them into for-profit capitalist corporations, many SOEs once operated under a public service and nation-building mandate. Nowhere do these voices call for renationalization or the reversal of neoliberal reforms—at least not yet. But if SOEs can play a role in the energy transition that private companies are unable to play because of concerns about “returns on investment,” then the case against renationalization completely disappears.²¹²

We then turn our attention to the challenges posed by energy expansion and what a *public pathway* has to offer. Here the discussion is more conceptual, which in some ways speaks to the daunting nature of the challenge. Addressing energy poverty also poses many challenges, but the historical record of public energy, the advantages of up-front financing, and the achievements of energy planning can help us chart the way forward. However, addressing energy expansion presents a much sterner test.

A *Public Pathway* approach to addressing the South-led energy expansion will require finding ways to make steady progress towards accomplishing a set of difficult tasks. Four tasks are briefly discussed below. These are:

- 1 Slow the pace of carbon “lock in.” Engage in “managed decline.”
- 2 Progressively change the energy mix by decarbonizing energy supply
- 3 Restore energy planning, control supply chains, develop promising technologies
- 4 Drive energy efficiency and conservation on a non-monetary, public goods, basis.
Build the institutional framework for public-public partnerships

We will attempt to summarize the main dimensions of these tasks in the final pages of this document.

The Crucial Role of the Power Sector and the Need for “Comprehensive Reclaiming.”

In the first section, we will explain why a *comprehensive reclaiming* of power sector is crucial to the *public pathway* approach, and how the power utilities, once fully public and operating under a new mandate, can play a leading role in driving a just energy transition.

Any serious effort to drive an economy-wide transition to a low carbon and truly sustainable future will depend on changes in *how* electricity is produced. And any attempt to decarbonize transport, heating and cooling, industrial processes, etc. while simultaneously taking steps to eradicate energy poverty, must involve generating a lot *more* electricity. An economy-wide transition will therefore be contingent upon both decarbonizing electricity supply and dramatically increasing the amount of electricity generated. These are currently well-established facts.

However, transitioning to low carbon energy is sure to span several decades, regardless of the policies used to promote decarbonization. Given this technical reality, centralized and fully integrated power systems will be an indispensable feature of both city-level and economy-wide decarbonization. According to the IEA, “Despite the expected growth in decentralized generation and storage in more developed energy markets, the majority of electricity systems are likely to remain largely based on centralized generation and a robust transmission and distribution network for the foreseeable future.” [IEA source].

It would be a serious mistake, therefore, to regard the incumbent companies as a political “lost cause.” There needs to be a clear and unambiguous commitment to public ownership of the power utilities because it provides what is perhaps the only plausible means of addressing some of the challenges, both technical and market related, posed by economy-wide electrification and decarbonization. Put differently, decarbonization will to a large extent depend on what role the power utilities will play in future.

A core feature of the public pathway approach is the *comprehensive reclaiming* of power systems and key technology supply chains. By comprehensive reclaiming we mean extending

public ownership to include electricity generation (and, progressively, over the supply chains of key technologies), transmission and distribution systems, as well as customer service or retail operations.

Key advantages of comprehensive reclaiming include:

1. The opening up of avenues of cooperation between reclaimed utilities, municipal authorities, and end-users of all kinds, thus allowing issues of equity to be properly addressed while decarbonization goals are pursued. Whereas “public-public partnerships” (PUPs) have emerged as a means of survival for financially fragile public companies (mostly water utilities), PUPs could provide some of the institutional superstructure of a new public energy system. PUPs can also facilitate full cooperation around R&D functions, the development of new technologies and the improvement of existing ones, all within a public goods framework.
2. Bringing into balance the need to decarbonize supply and to reduce energy demand. Under the neoliberal system of commodified electricity, demand reduction amounts to economic hardship or potential insolvency for for-profit energy companies. Relieved of the need to sell electricity by volume (volumetrically) reclaimed utilities can work alongside municipalities and large commercial and industrial users to promote efficiencies and reduce demand. Distributed energy resources (DER) such as batteries, sensors, etc., could be introduced by way of a suite of regulatory standards, no longer leaving the deployment of these technologies to “consumer choice” or as a side-business in energy arbitrage. (See below)
3. Reinstate evidence-based deliberations on decarbonization options and trade-offs. Economy-wide decarbonization will present unprecedented challenges. It is expected to increase demand for electricity (and also generation capacity). There will need to be a protracted period of public debate regarding which electrification and decarbonization options be prioritized immediately and over the longer term. These debates already exist, at least to a point. But the debates are currently distorted by the profit motive, in the same way as debates about the need for seat belts or the dangers of cigarette smoking were, in the 1950s and 1960s, distorted by, respectively, some of the major car companies and the tobacco industry. Situated at the heart of the process of economy-wide electrification, public energy systems can ensure that the principle of public goods and long-term planning take precedent over the commercial priorities of private interests.

Financing the Energy Transition -- Beyond “Climate Finance”

In this section, we turn our attention to the issue of financing the energy transition in the South, and how to develop alternatives to “green structural adjustment” that can exploit the cracks in the elite consensus on global economic management that are becoming increasingly visible.

What follows mostly concerns development finance, but here it is important to acknowledge that, while significant, the levels of capital available to the multilateral development banks would need to be increased by several orders of magnitude to be commensurate with the levels of capital investment needed to finance the transition.

The debates on climate finance that have spun around the UNFCCC since COP15 in 2009 can be very misleading, because they give the impression that, were it delivered, the \$100 billion per year committed by the North would make a substantial contribution towards covering costs of the energy transition. As noted in Part One, the UNFCCC itself acknowledges that countries in the South will require at least \$5.8 trillion cumulatively to reach their individual NDC commitments for adaptation and mitigation by 2030.²¹³

As we define the political focus of TUED South, it is important to develop a clear approach to climate finance—and to understand *why* it has not materialized. This was touched on in Part One and we will return to it below when we discuss “blended finance” and its role in green structural adjustment.

But we also need to acknowledge that an adequately financed *public pathway* approach will need to address a far more formidable set of the problems facing many countries of the South, among them rising levels of external debt, illicit financial flows, as well as tax avoidance and the undertaxing of high income groups and corporations.

In this regard it is essential for TUED South to join the fight for debt cancellation, to halt illicit financial flows used by multinationals to evade and avoid taxes, and to restore levels of domestic taxation that can generate revenue for the energy transition while at the same time redistributing wealth and creating employment. Some unions are already active in the global fight for debt cancellation and tax justice. Securing a *public pathway* approach to energy and climate will be contingent upon strengthening and broadening the movement for radical reform.²¹⁴ The launch of TUED South provides an opportunity for unions to consider how they can support initiatives that can reform the multilateral system in ways that can move resources—financial, technical and human—behind a public pathway approach to energy transition.

Repairing the Damage of Debt

We begin by considering the impact of debt on the Global South, and how debt servicing is sapping the capacity of governments to avoid energy-intensive and climate-damaging development. In March 2021 the UN’s Sustainable Development Group warned that rising levels of developing country debt was “severely limiting the ability of many countries to invest in

²¹³ UNFCCC Standing Committee on Finance, [First report on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement](https://unfccc.int/sites/default/files/resource/54307_2%20-%20UNFCCC%20First%20NDR%20summary%20-%20V6.pdf) , https://unfccc.int/sites/default/files/resource/54307_2%20-%20UNFCCC%20First%20NDR%20summary%20-%20V6.pdf

²¹⁴ https://taxjustice.net/wp-content/uploads/2021/11/State_of_Tax_Justice_Report_2021_ENGLISH.pdf

recovery, climate action, and the sustainable development goals.”²¹⁵ According to the World Bank, the external debt of all low and middle-income countries at a level of almost \$8.7 trillion at the end of 2020, the first year of the pandemic.²¹⁶ This is a nominal increase of \$548 billion compared to the previous year. These numbers help put the “\$100 billion” discussion on climate finance into perspective.

Examining debt servicing through a wider historical lens, developing countries have, since 1982, transferred an estimated \$4.2 trillion in interest payments to their creditors in Europe and North America, far outstripping the official development aid these countries received during the same period.²¹⁷ Debt payments have increased by 120% since the 2007 financial crisis, and in 2021 reached their highest level in 20 years.²¹⁸

The likely impact of developing country debt on the prospects for a just energy transition is reflected in recent data on public spending. According to the *Global Sovereign Debt Monitor 2022*, 135 out of 148 countries in the Global South are critically indebted.²¹⁹ Countries in this situation have two choices. They can either default or try to radically restructure their debt—which will mean likely being downgraded by the ratings agencies and being cut off from borrowing in future. Or critically indebted countries can impose deep austerity programs at the expense of public spending.

Of these two damaging options, most countries have for now chosen the second: austerity. “In many countries,” notes the *Monitor*, “debt service can therefore only be maintained at the expense of public services.” In 2021, “public spending was cut in 83 low- and middle-income countries to enable them to continue with debt servicing.”²²⁰ The *Monitor* anticipates that debt servicing will mean that “public primary expenditure in 2026 will be below pre-pandemic spending levels in 80 countries.”²²¹ A recent Eurodad report estimates that in 2023 85% of the world population will be on the receiving end of austerity measures. In all, the report shows that 143 countries — 94 of which are developing nations — are pursuing austerity, often at the urging of the IMF and the World Bank.²²²

Importantly, an increasing proportion of South-country debt is owed to private creditors, who normally charge much higher interest rates than other lenders. These creditors hold more than

²¹⁵ <https://unsdg.un.org/sites/default/files/2021-03/sg-policy-brief-on-liquidity-and-debt-solutions.pdf>

²¹⁶

<https://openknowledge.worldbank.org/bitstream/handle/10986/36289/9781464818004.pdf?sequence=4&isAllowed=y>

²¹⁷ Jerome Roos Why Not Default? The Political Economy of Sovereign Debt, 2019, Princeton University Press, page 2

²¹⁸ Debt Justice, Growing Global Debt Crisis to worsen with interest rate rises, 23 January 2022, <https://debtjustice.org.uk/press-release/growing-debt-crisis-to-worsen-with-interest-rate-rises>

²¹⁹ Erlassjahr, Global Sovereign Debt Monitor 2022.

<https://erlassjahr.de/wordpress/wp-content/uploads/2022/04/GSDM22-online.pdf>

²²⁰ <https://erlassjahr.de/wordpress/wp-content/uploads/2022/04/GSDM22-online.pdf>

²²¹ <https://erlassjahr.de/wordpress/wp-content/uploads/2022/04/GSDM22-online.pdf>

²²² Eurodad, Sept 2022. End Austerity: A Global Report on Budget Cuts and Harmful Social Reforms in 2022-25

60 per cent of all claims on countries in the Global South, and almost half of external debt and interest payments made by low and lower middle-income countries are to private lenders.²²³ The COVID pandemic triggered an expansion of public lending to the South, thus incurring more debt. This occurred as the health and economic crisis triggered by the pandemic was widening fiscal deficits, which many countries then had to cover principally with new debt.²²⁴ But the expansion of multilateral crisis financing allowed private creditors to exit from debtor countries without having to take any losses themselves. In 2020, 58 low- and middle-income countries paid more in interest and principal to external private creditors than they received from them in new loans during the same period. According to *The Monitor*, “instead of the crisis being swiftly resolved, private claims are being passed on to public budgets.”²²⁵

The prospect of a fresh wave of debt defaults has increased over the past year, as countries are pushed to breaking point, inviting further IMF-driven austerity. The case of Zambia is particularly instructive. Having defaulted on its debt [date], in September 2022 the country was forced to go to the IMF for a bail out loan. The loan was issued with conditionalities that were harsh enough to dispel any hopes that the IMF had closed the book on the kind of structural adjustment policies that were imposed on the South in the 1980s and 1990s.²²⁶ Zambia’s bailout agreement will require the country convert its budget deficit—at 6% of GDP in 2021—to a surplus of 3.2% of GDP by 2025.²²⁷ This will be achieved by the immediate removal of fuel subsidies, increasing electricity tariffs, severe cuts in government support for small farmers, and on extending VAT to a broader range of products and services. By 2030, Zambia is due to spend over four times more on debt payments than on addressing the impacts of the climate crisis.²²⁸

TUED South can help build the movement for either debt cancelation or repudiation. Not only is this a matter of basic justice, the impact of debt on the effort to address climate change must be addressed if we are to find the up-front capital needed finance a *public pathway* approach to energy transition and climate protection.

Tax Fairness and Addressing Illicit Financial Flows

Progressive and innovative reform of the tax system aimed at rebuilding the health of public finance holds great possibilities in terms of raising the resources needed to reclaim power utilities and rebuild the capacities of states to advance pro-public approach to development.

²²³ Ibid.

²²⁴ Erlassjahr, Global Sovereign Debt Monitor 2022.
<https://erlassjahr.de/wordpress/wp-content/uploads/2022/04/GSDM22-online.pdf>

²²⁵ Erlassjahr, Global Sovereign Debt Monitor 2022.
<https://erlassjahr.de/wordpress/wp-content/uploads/2022/04/GSDM22-online.pdf>

²²⁶ <https://peoplesdispatch.org/2022/09/22/zambias-debt-crisis-a-warning-for-what-looms-ahead-for-global-south/>

²²⁷ IMF Country Report No. 22/292, August 9 2022.

²²⁸ Tess Woolfenden and Dr Sindra Sharma Khushal, The debt and climate crises: Why climate justice must include debt justice. P6.

At a national level the capacity of governments to implement a progressive tax policy is crucial for advancing public ownership, overcoming inequality, and reversing the current trend for wealth to be redistributed from the poor to the rich.

The space for domestic tax reform is considerable, and its impacts could be transformative. The World Bank maintains that a 33% tax to GDP ratio is appropriate for domestic resource mobilization to cover basic needs and provide vital services. Many developing countries are taxing far below the 33% level and several—including India, Bangladesh, Nigeria and Algeria—have tax to GDP ratios that are considerably below 10%.²²⁹ The UN *Financing for Sustainable Development Report 2022* suggests that countries “can institute solidarity taxes or other measures aimed at appropriately taxing high-net-worth individuals, who have a lower propensity for spending marginal income, either as temporary crisis response measures or more permanent policies, with appropriate measures to counter tax evasion. Strengthening property and capital gains taxation can also generate new revenue.”²³⁰

The scale of illicit financial flows from developing and poor countries further exacerbates the fiscal crisis in many developing and least developed countries. By far the greatest component of illicit financial flows is the profit shifting operations of multinational corporations.²³¹ One of the main instruments of corporate tax evasion is trade mis-invoicing. This occurs when importers and exporters deliberately falsify the declared value of goods on invoices submitted to customs authorities. This allows traders to illegally move money across international borders, evade tax and/or customs duties, launder the proceeds of criminal activity, circumvent currency controls, and hide profits in offshore bank accounts. A 2021 Global Financial Integrity (GFI) report estimates \$1.6 trillion in potential trade mis-invoicing among 134 developing countries, of which \$835 billion occurred between developing countries and 36 advanced economies (2108 data).²³² The United Nations Economic Commission for Africa estimates that between 2000 and 2016 Africa had, on average, \$83 billion a year in net outflows through trade mis-invoicing.²³³ Cumulatively between 2000 and 2016, trade mis-invoicing was estimated at \$1.4 trillion, equivalent to 11.4 per cent of the value of Africa’s trade.²³⁴

To these losses one needs to add the result of the myriad of tax avoidance measures undertaken by multinationals. Many will be familiar with the cases of the big tech companies, Apple, Google, etc., who pay little tax by registering their profits in tax havens like Ireland, Luxembourg, Cayman Islands etc. This phenomena is known as base erosion and profit shifting and takes many forms such as one subsidiary of a company charging management, marketing,

²²⁹ <https://data.worldbank.org/indicator/GC.TAX.TOTL.GD.ZS>

²³⁰ United Nations, Inter-agency Task Force on Financing for Development, *Financing for Sustainable Development Report 2022*. (New York: United Nations, 2022), available from: <https://developmentfinance.un.org/fsdr2022>. P31

²³¹ Global Financial Integrity, *Trade-Related Illicit Financial Flows in 134 Developing Countries 2009 - 2018*, GFI 2021.

²³² A 2017 report of Global Financial Integrity (GFI) estimates that in 2017 illicit outflows from trade mis-invoicing in Kenya totaled KES 95 billion (\$885 million). See: Global Financial Integrity, *Illicit Financial Flows in Kenya*, page 23

²³³ United Nations UN Inter-agency Task Force on Financing for Development, *Financing for Sustainable Development, Bridging the Finance Divide* P48

²³⁴ *Ibid* page 48

legal and other fees to another subsidiary without any real activity taking place, people employed or offices existing. Annually estimated losses through these “aggressive tax planning methods has recently been calculated at \$187 billion on an annual basis.”²³⁵

A conservative estimate made in a Tax Justice Network indicates that the range of wealth accumulated over the years in tax havens, acting as tax-free investment, from these illicit financial flows is between US\$21 trillion and US\$32 trillion. It estimates that \$427 billion in tax revenue is lost every year to tax havens.²³⁶

Global Green New Deal and a “New Multilateralism”

The international trade union community has long supported both the reform of the multilateral system and a shift in global economic management away from the core neoliberal agenda that favors the world’s rich and powerful. Leading voices in the multilateral system—including UN Secretary-General Guterres—today talk openly about the crisis of legitimacy facing the multilateral institutions because of their failure to advance equality, protect health, or deliver on climate targets.²³⁷

We must therefore recognise that the success of a *public pathway* approach will likely be contingent on radical political reform of the multilateral system and at the level of key nation states. Unions will not be alone in the fight for radical reform. In May 2020, the UN Conference on Trade and Development (UNCTAD) called for \$2.5 trillion in international support for low- and middle- income countries, \$1 trillion of which would take the form of debt relief, \$1 trillion to be made available to South countries in the form of newly created Special Drawing Rights, and the remaining USD 500 billion to be allocated as grants by countries of the Global North multilateral financial institutions to low- and middle-income countries.”²³⁸

These and similar proposals have amplified calls for a Global Green New Deal and a global public goods approach to energy transition and climate protection. In April 2019 an UNCTAD report prepared by Boston University’s Global Development Policy Center articulated the *Geneva Principles for a Global Green New Deal*. It proposed a research and policy agenda “that rebuilds the rules of the global economy while deliberately respecting the space for national policy sovereignty.”²³⁹ This, says the report, will require a new role for the state:

Increased public investment, minimum wages reflecting living costs, stronger collective bargaining institutions and universal comprehensive social protection are needed at the

²³⁵ The Missing Profits of Nations (No. 24701; NBER Working Paper Series) T Tørsløv, L Wier, G Zucman - 2018

²³⁶ <https://taxjustice.net/faq/how-much-money-is-in-tax-havens/>

²³⁷ <https://www.nelsonmandela.org/news/entry/annual-lecture-2020-secretary-general-guterres-full-speech>

²³⁸ <https://news.un.org/en/story/2020/03/1060612>

²³⁹ UNCTAD/Boston University: A New Multilateralism for Shared Prosperity: Geneva Principles for a Global Green New Deal, <https://unctad.org/webflyer/new-multilateralism-shared-prosperity-geneva-principles-global-green-new-deal>

same time as rapid decarbonization. But this will not happen unless better multilateral governance promotes and coordinates a global program of redistribution and recovery.²⁴⁰

A Global Marshall Plan: Revitalizing Development Finance

The Global Green New Deal (GGND) framework offered by UNCTAD draws attention to the need for new role for development finance (sometimes referred to as “official development finance”, or ODF. UNCTAD authors Kevin Gallagher and Richard Kozul-Wright point to the need for ODF to be increased and deployed as part of a Global Marshall Plan. Operating under a new mandate and with more money to distribute, the Multilateral Development Banks (MDBs), the Regional Development Banks (RDBs) the Development Finance Institutions (DFIs) have a major role to play in financing the GGND.²⁴¹

The authors point out that there are over 450 DFIs with total assets of \$11.6 trillion. These DFIs can finance upwards of \$2 trillion on an annual basis—representing roughly 12 percent of total world investment.²⁴² However, the DFIs “lack the scale and geographic coverage needed to play a catalyzing role to finance and provide adjustment for a just transition to a zero-carbon economy.”²⁴³ What is needed, they suggest, “is a bold reform agenda that can scale up public development finance on condition that it is aligned with a set of core principles around equality and sustainable development.”²⁴⁴

In calling for a Global Marshall Plan, Gallagher and Kozul-Wright note that, under the Bretton Woods system established in the mid-to-late 1940s, the World Bank was constructed around a public finance model to lead the post-war reconstruction and was shaped by New Deal thinking.²⁴⁵ Interestingly, it was the success of the Tennessee Valley Authority—the engine of publicly owned rural electrification in the US from 1935 onwards—that shaped the public mandate of the World Bank. Before the World Bank was established, “no international financial institution had ever been created with the purpose of channeling resources to poorer countries.”²⁴⁶

²⁴⁰ UNCTAD: Reforming the International Trading System for Recovery, Resilience and Inclusive Development, UNCTAD Research Paper No. 65, UNCTAD/SER.RP/2021/8

²⁴¹ Among the largest MDBs are the AfDB, ADB, Asian Infrastructure Investment Bank (AIIB), European Bank for Reconstruction and Development (EBRD), EIB, Inter-American Development Bank (IADB), IsDB and the World Bank Group. DFIs are different institutions to MDBs and RDBs; many are investment companies and/or funds, which are not regulated in the same way as banks and they are not financed by the capital markets. This means they can have a relatively higher risk appetite than some MDBs and RDBs. See:

²⁴² Xu et al, 2020, cited by KGS/RKW. [full ref needed]

²⁴³ The Case for a New Bretton Woods

²⁴⁴ The Case for a New Bretton Woods

²⁴⁵ Gallagher, Kevin P., et al. "The Fierce Urgency of Now: The Case for a New Bretton Woods Moment." The Case for a New Bretton Woods, Polity, March 2022,

²⁴⁶ Helleiner, 2014, cited by KGS/RKW. [[full ref needed]

The Marshall Plan of the early post-war period was also based on a public finance model. The US committed more 1% its national income to the Plan for four consecutive years. Gallagher and Kozul-Wright suggest that, once established, a new Marshall Plan could disperse capital either as grants or zero interest loans, and this could be accompanied by debt moratoria followed by restructuring and cancellation. Marshall aid, they note, was based on the recognition that heavy debt-servicing obligations would hold back the investment needed for recovery and longer-term growth.

Under a new Global Marshall Plan, the resources transferred from one part of the world to another in the interests of advancing climate change mitigation and adaptation could be deployed in ways that would benefit and protect *everyone*, regardless of location. A *shared expense* approach thus provides a viable alternative to loans-based climate finance that, as we have seen, is both inadequate and incurs further debt on the countries of the South. A Global Marshall Plan therefore provides a platform for the kind of global public goods approach that the current situation demands.

Using Development Finance to Expand Public Ownership

In contrast to the paltry levels of climate finance being discussed in the context of the UNFCCC, advocates of a GGND call for levels of financing that are more commensurate to the challenges posed by the need to transition away from fossil fuels to low carbon sources of energy.

However, advocates for a GGND are more inclined to talk of the need for public *investment*, while public *ownership* is referred to only seldomly and often in passing. A scaling up of public development finance, while in many respects progressive in terms of its social and economic outcomes does not, in and of itself, strengthen the capacity of states to apprehend the energy expansion or impede the growth imperatives that define the current capitalist political economy. With energy demand rising at between 2%-3% every year, and almost three-quarters of new demand currently being met by fossil fuels, there is an urgent need for public finance to be deployed in ways that can begin to intercept and impede the expansionary dynamics of the capitalist political economy.

Publicly owned energy will not make rising energy demand miraculously disappear or solve all the entire array of problems and challenges associated with debarbonization. But it offers options for energy conservation, efficiency advancements, and the development and deployment of essential technologies that the current policy framework precludes.

In Part One we documented how the current neoliberal approach to energy transition is already being sustained by high levels of public finance, but this finance has not been able to “mobilize” or “catalyze” the levels of private investment needed to reach climate targets. But it has guaranteed returns on investment for multinational corporations, project developers, and financial interests. Previous TUED’s working papers have drawn attention to the socially regressive nature of “subsidies without end” and how subsidies have been used to strengthen

the private sector at the expense of the public sector, thus undermining the capacity of the latter to deliver public goods.

When examined in this light, scaling up development finance needs to be tied to a public ownership agenda that, if implemented, can begin to change the expansionary dynamics of the capitalist political economy. If not tied to expanding public ownership, higher levels of development finance may simply redirect public finance from one sector of the economy to another, without altering the overall public-private ownership profile. The potential of development finance—and public finance more broadly—to advance some meaningful degree of “system change” will be wasted.²⁴⁷

TUED South can therefore help point to how public finance could be used to expand public ownership of energy systems and, second, what this might mean in terms of strengthening the viability and effectiveness of the GGND approach over the longer term.²⁴⁸ According to UNCTAD, “revitalizing public finance is fundamental to rebuilding the world economy through a just transition to a zero-carbon global economy.”²⁴⁹ But without expanding public ownership it is difficult to see how rebuilding the global economy might help with either of these crucial tasks.²⁵⁰

One of the tasks of TUED South might be to compile a detailed assessment of how increased public financing might provide a means to rebuild the capacities of states to accumulate strategic assets and expand public property and, by extension, exert more control over the kinds of decisions that will be needed to reconfigure the political economy in ways that can “lock in” climate friendly energy practices and develop the appropriate technologies.²⁵¹

²⁴⁷ Nicola Bilotta and Fabrizio Botti’s paper *Paving the Way for Greener Central Banks* notes how central banks can “move credit toward green assets and away from brown ones,” In so doing, “the financial markets allocate credit to green companies on terms that are more favorable than is the case with the ‘brown’ ones.” While using public finance to expand state assets is an option, they note that only a few central banks currently have “asset purchase programs” that can, in principle, use public finance to expand public property. See Nicola Bilotta and Fabrizio Botti, *Paving the Way for Greener Central Banks*, Edizioni Nuova Cultura for Istituto Affari Internazionali (IAI) 2022 <https://www.iai.it/en/pubblicazioni/paving-way-greener-central-banks>

²⁴⁸ For example, the original draft green new deal submitted to the US Congress in early 2019 noted, “There is also a space for the government to take an equity role in projects, as several government and government-affiliated institutions already do.” But the reference (indirect as it is) to ownership ends there See: Draft Text for the Proposed Addendum to the House Rules for the 116th Congress of the United States <https://docs.google.com/document/d/1jxUzp9SZ6-VB-4wSm8sseIVMsqWZrSrYpYC9slHKLzo/>

²⁴⁹ UNCTAD, 2019, cited in New Bretton Woods

²⁵⁰ It is worth noting that the current lack of attention to public ownership stands in stark contrast to the left debates during the post war period that lasted well into the 1980s, when the expansion of state assets was a central feature of left economic policy and shaped both the short term and long-term goals of both social democratic and more explicitly socialist political projects.

²⁵¹ Since the mid-1980s or so, public ownership as a left issue has been pushed to the sidelines to the point of being mostly invisible. For a discussion on ideological downgrading of public ownership and “Third Way” Social Democracy, see TUED 2018: Unions and the Just Transition: The Search for a Transformative Politics

The multilateral system can—and must—facilitate a policy shift in the direction of increasing grants-based financial assistance tied to the expansion of public assets. The institutions overseeing the grants can ensure they are compatible with a global public goods agenda by working alongside poor-country governments as equal partners, and not as enforcers.

Alternatives to “Blended Finance”

Returning to the issue of climate finance, the international trade union movement has consistently reinforced calls for the rich countries to honour their commitments.²⁵² A public pathway approach must take this support to a higher level. Unions in the South (and TUED South) are well situated to play this role.

In terms of specific actions, two stand out. First, we can draw attention to the absolute failure of the current approach to climate finance in ways that are more nuanced, cogent, and persuasive. Second, we can point to the need to redirect development finance towards restoring the financial viability and technical proficiencies and capacities of public entities—principal among them being reclaimed national energy utilities. We can show how redirecting development finance in this way would be more effective in terms of driving the energy transition than the current emphasis on subsidizing private interests through mechanisms like “blended finance.”

These two arguments reinforce each other: The more indisputable the critique, the more likely the alternative will be taken seriously both by our allies as well as by the less ideologically driven policy makers that currently occupy the policy mainstream.

In terms of the first argument, in Part One we showed how that the current approach to climate finance is failing to generate the \$100 billion per year target established by the UNFCCC and adopted by the Paris Agreement. We also explained why rich-country stinginess does not explain why the level of climate is less than has been promised. Efforts to reach the UN’s Sustainable Development Goals (which includes climate and energy related goals, namely SDG7 and SDG13²⁵³) have, according to UNCTAD, also been impaired by a financing gap of \$2.5 trillion per year.²⁵⁴ And we noted that the inadequate amounts of climate finance that has been committed thus far mainly consists of public money that has produced low levels of additional private investment. This is a crucial point, because it helps make the case for a *public pathway* approach to climate finance.

In 2015, when it became clear that the transition to a low-carbon future was not likely to attract the levels of private investment that had earlier been anticipated, the World Bank pivoted towards a policy that uses public-sector development funds to spur additional private

²⁵² https://www.ituc-csi.org/IMG/pdf/cop_26_en-2.pdf

²⁵³ <https://sdgs.un.org/goals/goal13>

²⁵⁴ This is a 2014 estimate and may have been changed. See: UNCTAD – United Nations Conference on Trade and Development (2014) World investment report 2014: investing in the SDGs. New York and Geneva: United Nations Conference on Trade and Development. unctad.org/en/PublicationsLibrary/wir2014_en.pdf.

investment—so-called “blended finance.”²⁵⁵ Blended finance has been described as “the strategic use of public or philanthropic development capital for the mobilisation of additional external private commercial finance for SDG-related investments.”²⁵⁶ The World Bank was confident that blended finance would lead to a situation where billions of dollars of development finance would “unlock” trillions of dollars from private investors, a level of financing that would make the SDGs attainable.²⁵⁷ The Bank’s “billions to trillions” message was reinforced by the Addis Ababa Action Agenda adopted in July 2015 at a gathering organized by the UN’s Department of Economic and Social Affairs (UNDESA).²⁵⁸

However, this policy has been a total failure. A 2019 report by the Overseas Development Institute (ODI, a London based think tank) has called for a “reality check” and the need to “bridge the current disconnection between policy rhetoric and the operational reality.”²⁵⁹ Analyzing data from the MDBs and DFIs, the report documents the range of “leverage ratios” for blended finance. A leverage ratio is an attempt to capture how much a \$1 of public money has generated or might generate from the private sector.²⁶⁰ The report concluded that a dollar of public investment might be expected to mobilize just \$0.37 in private finance in low-income countries (LICs), and marginally more in lower middle-income countries (LMICs) and upper middle income countries (UMICs), respectively, \$1.06 and \$0.65.²⁶¹ This is a far cry from the “billions to trillions” scenario presented by the World Bank. Not surprisingly, the ODI recommended that “policy-makers need to rein in their expectations of the potential of blended finance.”²⁶² Going further, the ODI report concluded, because “the public sector picks up much of the cost..blended finance does not mitigate risk but merely transfers it from the private to the public sector.”²⁶³

²⁵⁵ World Bank, 2015. From billions to trillions: transforming development finance. Document prepared jointly by the AfDB, ADB, EBRD, EIB, IADB, IMF and World Bank Group for the 18 April Development Committee meeting. Washington, DC: World Bank. [siteresources.worldbank.org/DEVCOMMIT/Documentation/23659446/DC2015-0002\(E\)FinancingforDevelopment.pdf](https://siteresources.worldbank.org/DEVCOMMIT/Documentation/23659446/DC2015-0002(E)FinancingforDevelopment.pdf)

²⁵⁶ http://s3.amazonaws.com/aws-bsdc/BFT_BetterFinance_final_01192018.pdf#asset:614:url

²⁵⁷ World Bank, 2015. From billions to trillions: transforming development finance. Document prepared jointly by the AfDB, ADB, EBRD, EIB, IADB, IMF and World Bank Group for the 18 April Development Committee meeting. Washington, DC: World Bank. [siteresources.worldbank.org/DEVCOMMIT/Documentation/23659446/DC2015-0002\(E\)FinancingforDevelopment.pdf](https://siteresources.worldbank.org/DEVCOMMIT/Documentation/23659446/DC2015-0002(E)FinancingforDevelopment.pdf)). According to the Blended Finance Taskforce “blending, done well, is one of the best solutions to turn billions of ODA aid money into trillions of investment capital for the SDGs.” See: Blended Finance Taskforce *Better finance, better world* (2018) Consultation paper of the Blended Finance Taskforce in consultation with the Business & Sustainable Development Commission and SYSTEMIQ. London: Blended Finance Taskforce, www.blendedfinance.earth/better-finance-better-world

²⁵⁸ UNDESA – United Nations Department of Economic and Social Affairs (2015) Addis Ababa action agenda of the Third International Conference on Financing for Development. New York: United Nations (sustainabledevelopment.un.org/index.php?page=view&type=400&nr=2051&menu=35)

²⁵⁹ <https://odi.org/en/publications/blended-finance-in-the-poorest-countries-the-need-for-a-better-approach/>

²⁶⁰ ODI 2019 page 34

<https://odi.org/en/publications/blended-finance-in-the-poorest-countries-the-need-for-a-better-approach/>

²⁶¹ The report also stated that high leverage ratios are not “automatically synonymous with high levels of additional financing” because “the private investment would have materialized anyway, without public support.” ODI, page 11

²⁶² ODI, 2019, page 38

²⁶³ ODI, 2019, page 38

The *Just Energy Transition Partnership* with South Africa provides an example of development aid comes in the form of concessional finance is “blended” with non-concessional private finance, providing a gift to private investors by making profitable what would not otherwise be profitable. The ODI points to the need for public policy interventions that “are more effective and transparent than providing a direct subsidy to the private sector.”²⁶⁴

The 2019, the UN’s *Financing for Sustainable Development Report* reached a similar conclusion. Looking at investment trends through the lens of the SDGs, it concluded “there has been no major uptake in private investment ... To date, the public sector largely dominates infrastructure spending in low- and middle-income countries, accounting for 87 to 91 per cent of infrastructure investments.” Significantly, the report noted, “subsidies can make more projects ‘investable,’ but policymakers need to consider when privately-delivered infrastructure services are likely to offer better value for people than the public alternative.”²⁶⁵

Clearly, given these data, undermining a public energy company to attract private investment will lead to a “lose-lose” situation where the main provider of electricity becomes decapitalized, and the private sector fails to invest.

This brings us to the second argument: that there is a better way for the North to fulfil its climate obligations to the South. Grant finance (which the ODI report recommends as an alternative to blended finance) alongside direct technical assistance, skills development, and technology transfer, can begin to build an institutional framework of cooperation, thus replacing public-private partnerships (P3s) with “public-public partnerships” (or “PUPs). A Global Marshall Plan could direct finance to public institutions and help cultivate the kind of public service ethic that emerged from many of the post war anti-colonial struggles and left political projects in a host of countries. Armed with the facts, South unions will be better placed to amplify the rising opposition to both the “green structural adjustment” agenda and the entire investor-focused framework that is today creaking and appears ready to collapse.

TUED South could help advance this alternative agenda. Indeed, the entire international trade union movement can challenge highly visible initiatives like the Just Energy Transition Partnership (JETP) with South Africa, which explicitly calls for the “unbundling” of the public power utility ESKOM and to accelerate the role of the private sector in power generation.²⁶⁶ Policies like this that have been promoted in the name of protecting the climate will have an opposite impact, in that they undermine the capacity of states—and national power companies—to play a leading role in the energy transition.

Reclaim and Restore National Power Utilities

²⁶⁴ ODI, 2019, page 12

²⁶⁵ United Nations, Inter-agency Task Force on Financing for Development, *Financing for Sustainable Development Report 2019* (New York: United Nations, 2019), available from: <https://developmentfinance.un.org/fsdr2019>

²⁶⁶ Eskom Transformed

For unions and their allies, stopping green structural adjustment while critically important, amounts to damage control, or a means to prevent further harm. A *public pathway* alternative must offer ways to remove or detour around obstacles that prevent many poorer states' building power sector capacity and infrastructure.

By now it should be obvious that states with severely constrained public budgets are in no position to “de-risk” investments made by for-profit interests that seek, in the case of typical power purchase agreements (PPAs), to secure returns at around 12% per year for what would be, in most instances, 20 years or even longer. This largely explains why there is such a shortage of investment in new capacity, and why unacceptable levels of energy poverty persist. But neither are those same states always able to finance projects themselves. Therefore the subsidies regime that currently sustains IPPs using mechanisms like power purchase agreements, must be scrapped. So too must capacity auctions that actually protect private energy companies (especially in renewables) from market competition.²⁶⁷

Therefore development finance should not be wasted on “catalysing” private investment that will not show up; rather, it should be redirected towards reclaiming and restoring national power utilities, and aid agencies can then *partner* with governments to mobilize public financing for the energy transition.

Addressing Energy Stagnation and Poverty

In this third section of Part Two will focus on how a *public pathway* approach could begin to address energy stagnation and poverty, and how fully resourced national companies can begin to build capacity to generate electricity according to kind of tried and trusted public methods that, for many decades, worked well.

We will lay out, in broad terms, the accomplishments of public energy systems, both prior to the neoliberal reforms that began in the 1980s, during the reform period itself when many public systems were distorted by pro-market policies but nevertheless survived, and in the more recent period.

We will focus on Sub-Saharan Africa (SSA). As noted in Part One, SSA is the region of the world where energy poverty is most prevalent and, second, its experience draws attention to the specific (and highly negative) impacts of neoliberal climate and energy transition policy in the poorer countries of the South.²⁶⁸ In 2017, 573 million people in SSA (that's roughly 53% of the

²⁶⁷ TUED Working Paper 10, Preparing a Public Pathway: Confronting the Investment Crisis in Renewable Energy, November 2017. <https://rosalux.nyc/preparing-a-public-pathway/>

²⁶⁸ According to ODI, 27 of the world's 34 low-income countries (LICs) were in sub-Saharan Africa. <https://odi.org/en/publications/blended-finance-in-the-poorest-countries-the-need-for-a-better-approach/>

region's population) lacked access to electricity.²⁶⁹ Approximately 70% of the world's energy poor live in SSA.

According to a multiagency report led by the World Bank that tracks SDG7, the share of the world's population with access to electricity reached almost 90% in 2020, up from 83% in 2010. The number of people lacking access fell from about 1.2 billion to 759 million during this ten-year period. From 2017 to 2019, approximately 130 million people gained access to electricity in each of those three years.

Latin America and East Asia are today almost 100% connected, although South Asia still has around 20% of its people without power. The rapid pace of annual growth in electrification was mainly driven by advances in India (263 million connected) and Bangladesh (53 million connected) during the period 2010-2019. Taking a longer-term view of India's electrification, the IEA notes, "Near-universal household access to electricity was achieved in 2019, meaning that over 900 million citizens have gained an electrical connection in less than two decades."²⁷⁰

Part One also noted that advances in electrification were achieved by adding coal- and gas-fired generation capacity, although large public hydro systems and some nuclear capacity also made a contribution. Because of the low levels of electrification in SSA, efforts to address the region's energy poverty presents the world with an opportunity to create an energy system that is low carbon, but sufficiently developed to meet the energy needs of some of the world's poorest people. Such a goal would be consistent with SDG7, which is to achieve universal access to electricity; to increase the global percentage renewables, and double the improvement in energy efficiency

However, as the IEA has documented, reaching universal access presents an enormous challenge. In Sub-Saharan Africa alone universal access means connecting around 85 million people each year through 2030.²⁷¹ At the global level, current policies will "fail to deliver full access to energy for all or to provide a substantial improvement in air quality."²⁷² Based on existing policies (what the IEA calls the *Stated Policies Scenario*) some 660 million people are expected to still lack access in 2030. To meet SDG7, "The access rate will have to more than triple between now and 2030."

The Persistence of Energy Poverty in SSA

²⁶⁹ World Bank. (May 22 2019) 'Energy Progress Report 2019'. Available at: <https://www.worldbank.org/en/news/press-release/2019/05/22/tracking-sdg7-the-energy-progress-report-2019> (retrieved 22 June 2020).

²⁷⁰ IEA's *India Energy Outlook 2021*

²⁷¹ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO). Main Messages, page 2

²⁷² International Energy Agency, 2019. *World Energy Outlook 2019*. <https://www.iea.org/reports/world-energy-outlook-2019>

In developing TUED South's approach to addressing energy poverty, it is important to know the reasons behind its persistence in SSA, especially when compared to the expansion of access to electricity in many other developing countries.

The stark reality is that current policies have made a renewables-based future for SSA almost unimaginable. However, a future based on fossil-based power is also difficult to envisage. The lack of available capital for building new generation capacity and extending transmission and distribution systems is the main reason for energy poverty. Public budgets are constrained, and private investors are unlikely to invest in new infrastructure without cast-iron guarantees of making what they see as satisfactory returns.

Part One noted how the vast majority of people gaining access to electricity during the past decades did so because of a massive increase in centralized power generation. In China and India, renewable energy has made a significant contribution to the effort to reach universal access. However, looking at the electrification data elsewhere in Asia, the contribution of renewables to extending access has been far less significant. For example, Indonesia has achieved 97% electrification, but the amount of wind and solar power installed barely registers (less than 1% of electricity supply).²⁷³ Malaysia, Philippines, Singapore, Brunei Darussalam, Lao, Myanmar, Cambodia have each installed less than 2GW modern renewables (although Thailand has reached almost 4GW). This means that universal access, while not yet at 100%, is being attained almost entirely by expanding fossil fuel use.

Beyond the OECD countries, renewable energy deployment is today very uneven. In 2021, China added 121 GW of renewable energy capacity, but the rest of the countries in Asia together added just 34GW.²⁷⁴ Of the ASEAN countries, Vietnam is the exception, having installed 17GW of solar in just three years (2017-2020) but this has since slowed down. To sum up the current situation: access to electricity is being led by fossil fuels; renewables are growing quickly in a few countries (China, India and Vietnam) but in many countries of the South renewables are inching forward at a snail's pace.

A public pathway approach to addressing energy poverty in SSA must address the lack of infrastructure to generate electricity, transmit and distribute power. These barriers are formidable. Inadequate government finance a disinterested private sector currently pose major obstacles. As we have seen, the financial obstacles are essentially political, not technical. More challenging is addressing is advancing electrification without relying on fossil-based power.

Building Capacity: The Record of Public Energy in the South

Neoliberals routinely pass judgment on SSA countries for what they have *failed* to achieve, seldom acknowledging what they *were able to* achieve during their post-colonial nation-building

²⁷³ https://www.irena.org/IRENADocuments/Statistical_Profiles/Asia/Indonesia_Asia_RE_SP.pdf

²⁷⁴

https://irena.org/-/media/Files/IRENA/Agency/Publication/2022/Apr/IRENA_-RE_Capacity_Highlights_2022.pdf?la=en&hash=6122BF5666A36BECD5AAA2050B011ECE255B3BC7

period of development; that is, before the IMF and the World Bank began their multidecadal war against public services.

At the beginning of the 1990s, virtually all major power generation systems throughout Africa, Asia, and Latin America had been publicly financed and many were publicly owned. This was also true of SSA. Concessionary loans from development finance institutions (DFIs) played an important role in terms of providing up-front capital in the form of low-interest loans, especially in low- and middle-income countries. This form of financing was a key element in the formation of vertically integrated power sector SOEs.²⁷⁵ Access to electricity grew during the early post-colonial period (1950s to 1970s) this period, but many SSA countries access remained very low. Even today, countries like Burundi, Chad and Rwanda are hovering at just a little over 10% access.²⁷⁶

Nevertheless, during the post-colonial period, some progress was made in terms of expanding access. And being aware of the accomplishments of public energy during this period can help counter the impact of decades of persistent neoliberal propaganda that relentlessly disparaged public energy systems. This propaganda requires a response, because its effects continue to have a palpable influence on current debates on the respective capacities of public and private energy systems.

The point here is not to re-tell the story of structural adjustment and the damage it caused; rather, the purpose is to show that public energy systems played an important role in the pre-neoliberal period; in many instances they survived the push to privatize power sectors and, once reclaimed, they can play an even more important role in future. This section will also look at South-based public energy initiatives of the more recent period (in Ecuador, Pakistan, and Mexico) that illustrate the potential of public utilities to become a central feature of the *public pathway* alternative.

Is There a “Renewables Only” Way to Address Energy Poverty?

A *public pathway* approach must address a critically important question: how can energy poverty in the global South be addressed without significantly increasing greenhouse gas emissions? Put differently, what are the alternatives to coal and gas that could be scaled up to meet the energy needs of countries that are today “energy poor”?

²⁷⁵ “African countries began to adopt a new ‘standard’ model for their power systems, influenced by pioneering reformers in the US, the UK, Chile and Norway (Patterson, 1999; World Bank, 2003). Urged on by multilateral and bilateral development institutions, which largely withdrew from funding state-owned projects, a number of countries adopted plans to unbundle their power systems and introduce private participation and competition (World Bank, 1993) DFID, 2002 See:

https://www.iatp.org/sites/default/files/Energy_for_the_Poor_Underpinning_the_Millenniu.htm).

²⁷⁶https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?contextual=min&locations=EC&most_recent_value_desc=false

As noted in Part One, in 2015 the UN adopted the 2030 Agenda and the Sustainable Development Goals (SDGs). Consisting of 17 goals, SDG #7 calls for, by 2030, “universal access to affordable, reliable, sustainable and modern energy for all, along with urgent action to increase substantially the share of renewable energy and double the rate of improvement in energy efficiency.”²⁷⁷ In its most recent *Tracking SDG7 2022* the report, the World Bank says: “Reaching universal access to electricity is essential to achieving net-zero emissions in a just and inclusive way and should be tailored to meet low-income countries’ needs.”²⁷⁸

But what does it mean to “increase substantially the share of renewable energy”? What is seldom, if ever, acknowledged in the mainstream reports is that behind the expansion of access lies the expansion of fossil fuels as a means of generating electricity. And when viewed alongside hydropower, nuclear, and modern renewables, we see that both the volume of coal and gas being burned in key countries is growing, not receding. Just as concerning, the *proportion* of fossil fuels in the energy mix in key countries is also increasing, as coal and gas installations grow faster than hydropower, nuclear, wind and solar. This is not consistent with SDG7, which imagines as aspires to extending access while expanding renewables *at the same time*.

In the case of India, the IEA notes that “The rise of renewables in India’s power sector has been a major success story.”²⁷⁹ And access to electricity has also grown quite dramatically in India’s rural regions. But this implies that renewables lie behind the increase in access. The numbers, however, tell a different story. Wind and solar account for 7% of India’s electricity generation, and coal’s share of electricity produced is 70%. Between 2015-2019 period, 58 GW of new coal-fired power came online, outstripping the power generated by new wind and solar installations by roughly three to one.²⁸⁰ What India has done is therefore not consistent with SDG7, which aims to achieve 100% access mainly through the expansion of renewables.

A cursory reading of mainstream reports on energy poverty and the role of renewable energy in the South leads to a clear conclusion: the World Bank, the IEA, IRENA, Sustainable Energy for All, etc. are attempting to conceal two realities. These realities are, first, nearly all of the progress in terms of advancing towards universal access to electricity is the result of utility-driven, grid-based electrification programs backed by public investment; and, second, the road to 100% access has been paved with coal.²⁸¹

²⁷⁷ SDG7 is really 4 goals in 1, universal electricity access (7.1.1), clean cooking access (7.1.2), renewable energy (7.2) and energy efficiency (7.3). See: <https://www.un.org/sustainabledevelopment/development-agenda/>

²⁷⁸ World Bank, *Tracking SDG7 2022*, <https://trackingsdg7.esmap.org/>

²⁷⁹ IEA, *India Energy Outlook, 202*, page 38

²⁸⁰ IEA, *India Energy Outlook, 202*, page 38, states that wind and solar capacity additions totaled 49GW. As a rule of thumb, per MW of installed capacity, new coal-fired power stations generate on average more than 3 times that generated by wind and 4 times that of solar on an annual basis, which makes new coal’s “lead” over renewables very wide indeed.

²⁸¹ An exception is Foster and Rana. (2020). *Rethinking Power Sector Reform in the Developing World*. This report is referred to several times throughout this document because it acknowledges—to an extent—that, when viewed over a 30 year period, World Bank policy has produced “mixed results.”

A *public pathway* approach to addressing energy poverty must offer viable options for scaling up low carbon electrification. In terms of expanding access to electricity, the historical record of public systems is impressive. Most of the major hydroelectric and nuclear projects of the past 60 or 70 years were both *low carbon* and *public*. However, it is also true that fossil fuels have been at the heart of the expansion of electricity access across the South. In this respect, carbon-intensive power also goes hand-in-hand with public power. Beyond the provision of basic access, fossil fuels have also driven much of the industrial development of the major developing countries, in the same way as coal, oil and gas provided much of the energy behind the economic development of the North in the previous Century.

This question draws attention to the technologies that might be deployed to address energy poverty. All energy-related technologies bring with them a range of challenges and problems, and modern renewable energy (wind, solar and so-called modern biomass) is no exception. There has been a lot of debate on technology-related questions, and there is a wide range of opinions across the international trade union movement with regard to the positives and negatives (real or assumed) of different low-carbon options. Nuclear, carbon capture, hydrogen, battery storage, as well as possible future technologies (such as carbon dioxide removal, or CDR) are, in one way or another, all controversial.

As we consider what a *public pathway* approach to different technological options might look like, it seems wise to be both rigorous, meticulous, and open minded. *All* technologies must be considered, whether established or prospective, in a manner that is mindful of the available facts. An ongoing assessment of the various options is critically important, and conclusions drawn should probably be provisional.²⁸²

What follows, then, are points for consideration that might inform future debates on technology-related questions in TUED South.

Off-Grid Electification and The Leapfrog Hypothesis

One body of ideas that has been particularly influential in terms of imagining how energy poverty can be addressed in a manner consistent with both the Paris targets and SDG7 asserts that energy-poor regions of the South are well positioned to “leapfrog” the phase of centralized grid-based energy and jump feet first into the transition to modern renewables.²⁸³ Whereas large nuclear, coal- and gas-fired power stations and hydroelectric dams take years to build, wind, solar and battery technologies are small, easy to install and, the argument goes, increasingly affordable. Rural communities without electricity can set up stand-alone

²⁸² During the 10-year history of TUED, there have been significant shifts

²⁸³ The term “modern renewable energy” has been used to distinguish from other forms of renewable energy. For example, cow dung and crop waste are “renewable,” but don’t qualify as “modern” even though, as sources of fuel, they remain very much part of the modern era. Leapfrogging : the key to Africa's development - from constraints to investment opportunities, <https://documents1.worldbank.org/curated/en/121581505973379739/pdf/Leapfrogging-the-key-to-Africas-development-from-constraints-to-investment-opportunities.pdf>

“micro-grids” so there is no need for traditional transmission and distribution (“T&D”) grids which are expensive and inefficient. Blessed with so much sun and wind, there is no reason why energy poverty cannot be consigned to history relatively quickly.²⁸⁴

Studies show that, for example, Africa has wind energy resources estimated to be 250 times the annual electricity demand.²⁸⁵ The continent has solar energy resources estimated to almost 1,000 times the continent’s annual electricity needs.²⁸⁶ Clearly, if electrification simply depended on the availability of wind and sunshine, then SSA would have reached 100 access by now.²⁸⁷ But, in late 2019, only 7.4GW of solar and 5.7GW of wind power were operational *in the entire continent*.²⁸⁸ In terms of generation capacity, just 2.1GW of wind and solar was added in Africa in 2021.²⁸⁹ By way of comparison, Asia has installed 258GW of wind power and Europe 195GW. Spain has installed more wind and solar capacity than 48 sub-Saharan African countries combined.²⁹⁰

Globally, the number of people connected to mini-grids grew from 5 million in 2010 to 11 million in 2019.²⁹¹ Given the number of people who still need energy, this is not very impressive. Also in 2019, 105 million people reportedly had access to “off-grid solar solutions” and almost half of them (51 million) were in sub-Saharan Africa.²⁹² Off-grid solar sales nearly tripled in sub-Saharan Africa between 2016 and 2019.²⁹³ However, “off-grid solar solutions” includes such things as solar lamps and small solar panels that can charge a mobile phone, power a fan, and (perhaps) a small refrigerator. The vast majority of solar solutions beneficiaries fall into the “Tier 1” category—which is very basic. These devices provide a good alternative to kerosene lamps

²⁸⁴ https://www.csir.co.za/sites/default/files/Documents/IRP_Update_Assumptions_1904.pdf Formal comments on the Integrated Resource Plan (IRP) Update Assumptions, Base Case and Observations 2016 by Jarrad G. Wright, Tobias Bischof-Niemz, Joanne Calitz, Crescent Mushwana, Robbie van Heerden, Mamahloko Senatla, April 4, 2017, page i

²⁸⁵ GWEC. (2020). New Analysis Shows Onshore Wind Potential Across Africa Enough to Power the Entire Continent Many Times Over. <https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=24607>.

²⁸⁶ Sampath Kumar V, Jagdish Prasad, Ravi Samikannu, Barriers to implementation of smart grids and virtual power plant in sub-saharan region—focus Botswana, 2018 <http://creativecommons.org/licenses/by-nc-nd/4.0/>

²⁸⁷ Foster, V. and Briceño-Garmendia, C. (eds.) (2010) *Africa's Infrastructure: A Time for Transformation*. World Bank, 5.

²⁸⁸ Institute for Developments Studies, The African Climate Foundation, and The Open University, Scaling China’s Green Energy Investment in Sub-Saharan Africa: Challenges and Prospects, Nov 2021, Executive Summary. This report was funded by NRDC.

²⁸⁹ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

²⁹⁰ <https://renewablesnow.com/news/spain-generates-436-of-power-from-renewables-in-2020-725418/>

²⁹¹ IRENA. 2020b. *Off-grid Renewable Energy Statistics 2020*. Abu Dhabi: IRENA.

²⁹² “Bespoke Analysis of Data Compiled for the Semi- Annual Global Off-Grid Solar Market Reports: H1 2016 to H2 2019.” www.gogla.org/global-off-grid-solar-market-report.

²⁹³ IEA, IRENA, UNSD, World Bank, WHO. 2021. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO) pp 34-35

and may reduce the use of diesel generators.²⁹⁴ At this point in time, these technologies do not offer a solution to the lack of reliable electricity.²⁹⁵

In the case of Bangladesh, solar home systems proliferated between 2003-2018, bringing basic electricity to 16% of the rural population. The expansion of small solar systems raised hopes that energy poor countries could “leapfrog” over the kind of centralized power generation that has been elsewhere.²⁹⁶ But by 2021, the level of new solar installations had collapsed to almost zero. The reason for the collapse is revealing: the government of Bangladesh accelerated the pace of its grid connections, and provided more reliable grid-based electricity at lower prices. From an access perspective, the results were spectacular: In 2016, 76% of the population had access to grid electricity in 2016. By 2019, it had reached 92.2%.²⁹⁷

A *public pathway* approach will need to be based on a rigorous interrogation of the real potential of off-grid technologies. Such an interrogation is currently complicated by the failures of neoliberal policy. For example, in 2013 President Obama’s Agency for International Development (USAID) launched its *Power Africa Initiative* “with the goal of doubling the number of Africans with access to electricity [and] emphasizing the promotion and development of off-grid and distributed technologies to be used at a local level.”²⁹⁸ The Initiative “establishes goals of providing access to 50,000,000 sub-Saharan Africans by 2020 and adding 20,000 megawatts of electricity by 2020.”

These goals were not reached, although USAID has yet to acknowledge the failure or the reasons that may have contributed to it.²⁹⁹ According to USAID, “Power Africa focuses on leveraging private investment to increase financing for power projects in sub-Saharan Africa.” The Initiative committed to “partner with sub-Saharan African governments to develop policies that reduce burdensome regulations that hinder private investment in the electricity sector.” Once again, governments were urged to create an “enabling environment” for the private investment in solar lanterns and similar technologies.³⁰⁰ A 2020 desk study on the Initiative reported that its impact on electrification trends had been “minimal.”

²⁹⁴ For more details on the “Tier” system of electrification, see: <https://www.esmap.org/>

²⁹⁵ IEA, *India Energy Outlook*, 2021, Chapter 4

²⁹⁶ Uddin M, Rahman M, Mofijur M, et al. Renewable energy in Bangladesh: Status and prospects. *Energy Procedia*. 2019;160:655–661. doi:10.1016/j.egypro.2019.02.218. Halder P, Paul N, Joardder MU, et al. Energy scarcity and potential of renewable energy in Bangladesh. *Renew Sustain Energy Reviews*, 2015;51:1636–1649. doi:10.1016/j.rser.2015.07.069

²⁹⁷ <https://energytracker.asia/the-state-of-renewable-energy-in-bangladesh/>

Kumar Biswajit Debnath & Monjur Mourshed (2022) Why is Bangladesh’s electricity generation heading towards a GHG emissions-intensive future?, *Carbon Management*, 13:1, 216-237, DOI: [10.1080/17583004.2022.2068454](https://doi.org/10.1080/17583004.2022.2068454)

²⁹⁸ <https://www.govinfo.gov/content/pkg/CRPT-114srpt176/html/CRPT-114srpt176.htm>

²⁹⁹ <https://www.usaid.gov/sites/default/files/documents/2021-Power-Africa-Annual-Report.pdf>

³⁰⁰

<https://www.usaid.gov/sites/default/files/documents/Power-Africa-Enabling-Environment-Fact-Sheet-09072022.pdf>
f

There is some evidence that China's public approach to off-grid electrification produced better outcomes. The government's Brightness Program (TBP) was launched in 1998. China's State Council has allocated about \$50 million under the Tenth Five-Year Plan period (2001-2005) for the Program. It is not clear how many rural dwellers in China gained access to electricity as a result of this and similar programs, although studies estimate that the number could be as high as 32 million. If these estimates are accurate then it draws attention to the contrasting capabilities of the neoliberal "enabling environment" approach to the deployment off-grid solar systems and the publicly financed approach. However, more research is needed.

Note to editor: subsection on Africa's unfulfilled hydropower potential will go here
Insert data on the "big grid" approach and the problems of overbuild and land use [Eskom Transformed]

A Solution in Search of a Problem: The Synthetic Crisis of Public Power

The record of privatization vividly illustrates what was positive about public energy systems, why they should be fully restored ("comprehensive reclaiming"), and what obstacles will need to be overcome in future given the challenges identified in Part One.

The privatization of power systems began in Chile (1978) during a period of brutal dictatorship following the 1973 coup led by Pinochet. Privatization became a priority of the Thatcher government in the UK (first elected in 1979 and re-elected in 1983) and the US under the Reagan and Bush Administrations (1981-1993). By the early 1990s, power sector privatization was a key feature of the IMF and the World Bank's structural adjustment "shock therapy" agenda in the former Soviet Bloc and across Latin America, Africa (Kenya) and parts of Asia (for example, the Philippines).

At the beginning of the 1990s, virtually all major power generation systems throughout Africa had been publicly funded and many were publicly owned. Concessionary loans from development finance institutions (DFIs) played an important role in terms of generating up-front capital. This form of financing was a key element in the formation of vertically integrated power sector SOEs.³⁰¹ Access to electricity was growing during this period, but in many SSA countries it remained in single digits, although thirty years later, countries like Burundi, Chad and Rwanda are hovering at just a little over 10%.³⁰²

³⁰¹ "African countries began to adopt a new 'standard' model for their power systems, influenced by pioneering reformers in the US, the UK, Chile and Norway (Patterson, 1999; World Bank, 2003). Urged on by multilateral and bilateral development institutions, which largely withdrew from funding state-owned projects, a number of countries adopted plans to unbundle their power systems and introduce private participation and competition (World Bank, 1993) (DFID, 2002 See: https://www.iatp.org/sites/default/files/Energy_for_the_Poor_Underpinning_the_Millenniu.htm).

³⁰² https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?contextual=min&locations=EC&most_recent_value_desc=false

Exactly what SOEs could have accomplished if it not for the neoliberal reforms is difficult to assess. Public systems had electrified much of the Global North and much of the South was following a similar course. Indeed, by the time neoliberals had consolidated their hold over the Bretton Woods Institutions in the early 1980s, many countries of the South had already reached electrification levels that surpassed 50%. Therefore the effort to develop a *public pathway* approach to energy transition can learn a lot from the post-colonial electrification experience.

Many post-colonial governments of the South regarded electricity as an essential service that could be embedded in national economic development, and in almost all instances investment was directed towards developing public systems. These systems frequently delivered levels of electrification that far surpassed pre-independence electrification programs that were designed to serve colonial interests and the exploitation of “natural capital.” To the extent that ordinary people in rural and urban areas had any electricity at all in the post-colonial or pre-neoliberal period was due to the accomplishments of public energy systems.

The commitment to universal access is tantamount to a commitment to raise living standards, because without electricity poverty is inevitable, as is low productivity, etc. Power utilities were set up to provide electricity and to keep ahead of rising demand, which would require planning and the ability to anticipate the level of new capacity – in generation, transmission and distribution – required to meet that demand. This is not an easy task. But if the task includes the need to make a financial surplus, then the task becomes much more onerous.

China: 900 Million Connections

China’s electrification has been particularly remarkable. An estimated 900 million people acquired access to electricity from the period 1949 to 2015. In numerical terms, this has been described as the most impressive achievement in the history of electrification.³⁰³

How was this achieved? China’s first phase of electrification was based on small hydroelectric systems and local grids, but as the national and regional grids expanded, large hydro, nuclear, gas and coal grew accordingly.³⁰⁴ In the three-decade period before China’s turn towards what the government called the “socialist market economy” (1949-1978) China’s generation capacity had already reached 57.1 GW—30 times the level reached in the pre-revolutionary period.

While the push to privatize public energy was gaining momentum in the OECD, the former Eastern Bloc, and in many parts of the South as part of the IMF and World Bank’s structural adjustment programs, China continued to roll out a fully public power system. By 1995, China’s generation capacity already ranked 8th in the world and, in year 2000, China’s electrification

³⁰³ He, Gang, David G. Victor. 2017. Experiences and lessons from China's success in providing electricity for all. *Resources, Conservation, and Recycling*. 122: 335-338. doi:10.1016/j.resconrec.2017.03.011

³⁰⁴ See: Subhes C. Bhattacharyya and Sanusi Ohiare, The Chinese electricity access model for rural electrification: Approach, experience and lessons for others, *Energy Policy* 49, 2012, <https://www.sciencedirect.com/science/article/abs/pii/S0301421512005848>

levels had reached 97%. On May 20th 2006, the Three Gorge Dam was completed, bringing on line a massive 22.5GW of public hydropower, the largest project of its kind anywhere in the world, by far. By 2015, China had reached 100% access, the first large developing country to do so.

What does China's achievement tell us about addressing energy poverty in rural SSA and elsewhere? Two things stand out. First, China's "Infrastructure to Every Village" policy viewed electrification as a means to facilitate rural economic development and raise the income of rural population, which in return promotes the use of electricity and attracts more investments to rural electrification. The more remote the region, the higher the proportion of government financing. In this respect, China's policy was very similar to the US' rural electrification program that began in 1935 as part of the New Deal. Had "full cost recovery" been the guiding policy, there would have been no rural electrification.

Second, roughly 80% of the rural population gained access through extension of the power grid. However, the remaining 20% were electrified by interconnecting small hydro and coal-fired plants into local and regional grids. This draws attention to the importance of grids to be able to deliver centrally-generated power *and* more local, distributed generation. When China reached 97% electrification, the remaining 3% of the population (roughly 23 million rural dwellers) living in the most remote rural areas acquired electrification via off-grid technology options, principally small solar PV systems. In the early 2000s, the cost of grid extensions in western or north-western China ranged between \$5000 and \$12,750 per kilometer. Local authorities relied on financial support from central government. Significantly, the more remote the rural area, the higher the level of central government support. Local administrations did contribute financially, but the contributions were based on their respective financial capacities. China reached 100% electrification by 2015.

Much more needs to be said about China's electrification and the relationship between the national government and the provinces and counties, how it was financed, and its contribution to China's industrial transformation. But in terms of considering *public pathway* to address present-day levels of energy poverty, China's approach to the electrification of the country's remote rural areas is instructive.

Development Aid as a Coercive Instrument

in terms of solutions to today's persistent levels of energy poverty, the neoliberal approach is bereft. But it is not just the failure to solve the problem that should haunt the neoliberal imagination. Equally serious, the structural adjustment programs of the 1990s and 2000s intercepted public electrification programs by depriving public companies of debt finance to continue with post-colonial efforts to extend access the electricity. To restore their access to finance, they would need to commit to privatizing their power sectors and to pass energy reform legislation to consolidate the commitment.

But given the history of achievements of public energy systems in many countries, what, then, justified neoliberal privatization? As we will see, power sector privatization bears all the markings of a solution in search of a problem. Public power systems were not perfect, and some were undoubtedly “inefficient.” Mistakes were made. But the idea that privatization would solve all the problems that confronted public energy companies in the post-independence period reflected the ideological hostility to “publicness” that was to become a notorious feature of structural adjustment

It is important to recall that the structural adjustment programs of the early 1990s were marked by serious arm twisting on the part of World Bank and IMF officials. Enthused and empowered by “the triumph of the market” moment immediately following the collapse of the Soviet Union and the market reforms in China, Bank and Fund officials knew that Global South countries had nowhere else to turn for capital and no alternative model to guide them. Foreign aid became a coercive instrument used to punish governments that failed to comply with the laid down conditions. One of those conditions was power sector market reform and privatization.

Privatization: The “Standard Model”

The World Bank’s landmark 1989 statement *Sub-Saharan Africa: From Crisis to Sustainable Growth* was highly prescriptive in terms of pushing reforms that weakened the state and promoted the private sector (including massive cuts in public sector wages and staffing).

In the early 1990s, the IMF and the World Bank stated that they would no longer fund state-owned energy projects in developing countries, absent a commitment to break up their public companies into separate entities responsible for power generation, transmission and distribution (so-called “unbundling”); to establish an independent regulator (to drive through the neoliberal reforms and pare back the decision-making capacities of SOEs), create space for privately-owned independent power producers (IPPs),³⁰⁵ and introduce competition in both generation and distribution.

This package of reforms became known as the World Bank’s “standard model” of power sector privatization.³⁰⁶ The case for privatisation was normally built around three arguments. The first was the purportedly inefficient practices of public companies; the second was corruption, political favoritism, “excessive” staffing, etc. (often based on anecdotal evidence), and the third

³⁰⁵ According to Eberhard, “IPPs are defined as power projects that are, primarily, privately developed, constructed, operated, and owned; have a significant proportion of private finance; and have long-term power purchase agreements with a utility or another off-taker.”

³⁰⁶ “A series of steps that move vertically-integrated utilities towards competition, and generally include the following activities: corporatisation, commercialisation, passage of the requisite legislation, establishment of an independent regulator, introduction of IPPs, restructuring/unbundling, divestiture of generation and distribution assets and introduction of competition This model, which motivated [the] power sector globally, starting in the 1970s in industrialized nations, was brought to bear across Sub-Saharan Africa, from the 1990s onward.”

<https://www.gsb.uct.ac.za/files/KenyasLessonsFromTwoDecades.pdf>

argument was the need to attract *private* investment because, it was claimed, only the private sector had the kind of money to finance capital-intensive energy projects.

Neoliberals also pointed to the fact that, in the early 1990s, annual government subsidies for energy in developing countries were around \$50 billion (in 1992 dollars), more than the total ODA these countries received on a yearly basis.³⁰⁷ State-owned companies were depicted as breeding grounds for budgetary profligacy and nepotism. Brandishing public funds, spendthrift state officials were accused of hiring their friends and allies and of having little regard for the interests of the wider public. Reflecting the long political reach of these arguments in 2002 Clare Short, the Labour Party Secretary of State for International Development under UK Prime Minister Tony Blair, remarked: “The debate about whether to reform energy markets is now largely won. Few people who have the interests of poor people at heart would advocate the maintenance of many of the current energy systems that are badly managed, deeply corrupt and suck in vast amounts of public money to underwrite huge and recurring losses.”³⁰⁸

The association between inefficiency, poor governance, and corruption served a political purpose. It created the impression that inefficiency is not a *technical* challenge that needs to be addressed; rather, it is an *intrinsic flaw* that only public enterprises exhibit. For example, transmission and distribution losses refer to the share of power generated (normally 5% - 10%) that is lost for unavoidable technical reasons. In many countries of the South these “line losses.” were roughly 60% higher than those normally incurred in the developed world.

Reformers attributed the difference between losses in the developed North and those in the South to electricity theft. The latter occurs when poor people connect wires directly into distribution lines (a common sight in many poor countries) therefore bypassing any meter system that might have been installed.³⁰⁹ It has been suggested the populist idea that electricity is a human or universal right encourages theft, and makes it more difficult to recover costs, thus further increasing the financial stress on the utilities.

Too Much Electricity?

Neoliberal reformers also criticized public companies for the *over-production* of electricity. According to Eberhard, “Incumbent state-owned utilities invariably seek new generation

³⁰⁷ https://www.iatp.org/sites/default/files/Energy_for_the_Poor_Underpinning_the_Millenniu.htm

³⁰⁸ https://www.iatp.org/sites/default/files/Energy_for_the_Poor_Underpinning_the_Millenniu.htm

³⁰⁹ In a recent essay titled *The Consequences of Treating Electricity as a Right*, Burgess et. al.

Note, “Transmission and distribution (T&D) losses are about four times higher in the low-income countries as in the high-income countries (22.8 versus 6.1 percent). Yet the technologies used for distribution are largely the same everywhere: although the levels of investment or structure of the distribution network may be different, there is no way to justify a fourfold difference in losses on technical grounds alone. The divergence must be generated at least in part by social or institutional factors that vary across countries, such as—we argue in this paper—by social norms around electricity provision that contribute to poor bill payment rates and higher losses in low-income countries. See: *Journal of Economic Perspectives*—Volume 34, Number 1—Winter 2020—Pages 145–169

Available at:

<https://pedl.cepr.org/sites/default/files/JA%203858%20BurgessGreenstoneRyanSudarshan%20ConsequenecesOfTreatingElectricity.pdf>

opportunities for themselves, claiming that they can deliver cheaper power."³¹⁰ Eberhard does not explain why state-owned utilities might want to generate more electricity than “the market” requires. However, the history of public energy is anchored in the idea that electricity is the cornerstone of economic development; therefore adequate provision of electricity is essential. That a public utility would want to install more generation capacity than may be needed, and thus allow it to be ready to meet increasing levels of demand (known as “the capacity margin”) is consistent with the principle of basic energy planning and makes perfect sense. The alternative – too little capacity, and therefore not enough electricity – is a much bigger problem in terms of its social and economic implications. As noted above, the decade of loadshedding inflicted on the people of South Africa is a direct result of the undermining of the national utility (ESKOM) and the lack of investment in new generation capacity.

Neoliberals also complained that, when electricity was not being “pilfered,” the “excess” electricity provided by the national utility was in many instances underpriced. According to a World Bank report, privatization was expected to correct the problems of theft and underpricing: “Customers who pilfered electricity or failed to pay their bills will no longer be able to free ride after a private operator rolls out its revenue protection measures.”³¹¹ Governments were also criticized for using utilities “to achieve a wide range of other objectives such as employment (which led to overstaffing) or the transfer of resources to particular groups (such as supplying cheap power to farmers).”³¹²

Full Cost Recovery and the Synthetic Crisis of Public Companies

Thus we can see how the World Bank’s definition of success, namely “full cost recovery,” made the “failure” of public utilities almost inevitable. In a 1993 report titled *The World Bank’s Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory and Financial Reform* the Bank articulated the outright privatization of assets was not the primary goal. Rather, private participation was highlighted as a means to subject public companies to competition and have them behave like private companies even if they remained partially or even fully public. This, the Bank believed, improve sector performance and increase the level of investment.³¹³

Unable to recover costs, public energy companies were then declared “financially unviable.” This, in turn, led to them being downgraded by the “big three” ratings agencies, thus reducing their access to affordable financing. Financial “unviability” then turns into pressure to cut costs, neglect infrastructure, and postpone investment. In other words, the synthetic crisis morphs into a *physical* crisis that can affect everyone in the form of loadshedding, poor service, and a loss of skills and competencies.

³¹⁰ <https://www.gsb.uct.ac.za/files/KenyasLessonsFromTwoDecades.pdf>

³¹¹ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 163. Foster and Rana are quite critical of full cost recovery thinking, in the same way as the latter-day neoliberals sometimes criticize the excesses of “market fundamentalism” characteristic of the policy discourse in the early to mid 1990s.

³¹² <https://www.gsb.uct.ac.za/files/KenyasLessonsFromTwoDecades.pdf>

³¹³ World Bank, 1993. *The World Bank’s role in the electric power sector: policies for effective institutional, regulatory, and financial reform*, Washington, DC.

But it goes further: the IMF and the World Bank told governments to introduce policies that would make it even more difficult for the public utilities to reach the full cost recovery “goal” that the Bank and the Fund insisted was the key to success. In order to attract foreign direct investment (FDI), governments were told to liberalize markets and create an “enabling environment” for the private sector.³¹⁴ The entry into the market of IPPs raised costs for the utility while reducing market share and cutting off revenue streams. Already starved of capital, the utilities of the South fell deeper into a “death spiral” that made the case for privatization irresistible.

The undermining of the public utilities has, however, backfired. It bears repeating that the private sector has not committed investment to the power sector and the cost to the public purse of subsidies designed to unlock investment continues to grow. Meanwhile death spiral of the utilities has impacted both privatized companies as well as marketized public companies, and it has reduced the attractiveness of these companies to any would-be private sector buyer.³¹⁵ Importantly, by undermining public utilities, the policy has not only failed to address energy poverty, it obstructed and often halted electrification efforts that, despite the challenges posed by newly independent states, were to some extent making headway.

Whether produced efficiently or inefficiently, the value of electricity cannot be captured on financial spreadsheets. When neoliberals decide to subject public utilities to “full cost recovery” criteria to make them more efficient, they compromised the capacity of the utilities to meet broader energy-related and societal needs.³¹⁶ And if the private sector had been left to drive electrification, precious few people in either the North or the South would have gained access to electricity. Most governments—including conservative ones—embedded electrification into overall social economic development

But did privatization solve the investment problem? As we saw in Part One, the effort to create an “enabling environment” for the private sector has undermined the position of the utilities, but the private sector, the evidence suggests, has not been “enabled” enough. The incursions of the IPPs have not attracted investment, because the “end game” of the IPPs is to secure risk-free power purchase agreements (PPAs). This “build and sell” approach unloads costs and responsibilities onto the transmission and distribution networks that in most instances remain under public ownership.

This has led to a situation where public companies have been marketized and compromised. Clipping the wings of the utilities in energy poor countries has not increased the interest of the

³¹⁴World Bank, May 2006: Underpowered: The State of the Power Sector in Sub-Saharan Africa
Anton Eberhard, Vivien Foster, Cecilia Briceño-Garmendia, Fatimata Ouedraogo, Daniel Camos, and Maria Shkaratan
<https://openknowledge.worldbank.org/bitstream/handle/10986/7833/482140ESW0P11110Power0Sector0Review.pdf?sequence=1&isAllowed=y>

³¹⁵ TUED/AIDC/TNI: Eskom Transformed, 2021
<https://aidc.org.za/eskom-transformed-full-report/>

³¹⁶ ec.europa.eu/economy_finance/publications/publication_summary11904_en.htm

private sector. The investment deficit confronting the energy transition is more serious than ever.

The Aftermath: Philippines

[note to editor: this subsection does not really belong here.]

Nowhere is the failure of privatization more obvious than in the Philippines, where the government fully embraced the “standard model” of full-on privatization. Following the imposition of Marshall Law in 1972, President Marcos nationalized the power system, but then handed the operation of the system over to a private company, known as MERALCO.

The Electric Power Industry Reform Act of 2001 (EPIRA) outlawed government investment in new generation, but IPPs had taken over 46% of the country’s power generation, and the number of power purchase agreements had proliferated. EPIRA further deregulated generation and a wholesale market was established in 2006, opening access to the transmission grid to private companies. In 2007, the National Grid Corporation of the Philippines (NGCP) was granted a 25-year franchise to run the country’s transmission system. NGCP is a consortium led by Filipino tycoons and the State Grid Corporation of China. The latter owns 40% of the NGCP. The 2001 EPIRA legislation was supposed to bring about a free market in the energy sector that would lead to more efficient power distribution and lower prices. Instead, it has simply shifted energy from public ownership to a private oligopoly, a situation quite similar to what transpired in the UK when 5 corporations (known as “the Big Five”) consolidated control over the UKs power system. [ref Big Five needed here]

Following the passage of the EPIRA, the company raised prices to high enough to trigger a national inquiry. Electricity rates jumped by 55 per cent between 2003 and 2010, and MERALCO became one of the country’s most profitable corporations. MERALCO blamed the IPPs for the increases in prices, and the privatized transmission company blamed MERALCO. As Waldon Bello wrote in 2012, “What EPIRA has done is to put the Philippines in the record books. Surveys place the Philippines as having either the first or second highest electricity rates in Asia and among the top ten internationally.”³¹⁷ In 2017 the World Bank came close to acknowledging that the reforms had not been entirely successful, and “market players” had indeed engaged “in anti-competitive behavior provoking a sharp price hike.”³¹⁸

One of the justifications for privatization was the need to attract investment in new generation capacity. By 2014, only 2.22 GW of generating capacity had been added in the first 12 years of power sector reform, and this was mostly committed before EPIRA took effect. Released in 2014, The Department of Energy’s *19th Status Report on EPIRA Implementation* asserted, “The government may need to involve itself once again in power generation to avoid power shortages in the future and keep hold of the current momentum being enjoyed as an investment attractive economy.”³¹⁹

³¹⁷ <https://opinion.inquirer.net/67785/missing-in-action-president-aquino-and-the-meralco-rate-hike-scandal>

³¹⁸ Rudnick, Hugh; Velasquez, Constantin. 2019. Learning from Developing Country Power Market Experiences : The Case of the Philippines. Policy Research Working Paper; No. 8721. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31189> License: CC BY 3.0 IGO.”

³¹⁹ <https://www.doe.gov.ph/19th-status-report-epira-implementation?withshield=1>

Since the reforms were introduced, the Philippines' electricity mix is more dominated by fossil fuels than ever before, with coal (51%) and gas (22%) accounting for 73% of the country's total electrical energy needs. The Enactment of Renewable Energy Act in 2008 mandated a Feed-In-Tariff and priority connection and dispatch for renewables and offered other fiscal incentives. But renewables today barely register. In fact, power generation from renewable resources in Philippines fell from 33% of total generation in 2005 to 25% in 2017. Renewable energy generation continues to be dominated by hydro and geothermal power, which in 2017 amounted to 11% and 10% respectively; while wind, solar and biomass each contributed just 1% to total power generation.³²⁰

The Road Back: Rebuilding Public Energy in Kenya

A *Public Pathway* approach to addressing energy poverty in SSA can learn from the experience of Kenya. Typical of numerous other SSA countries, in the early 1990s Kenya embarked on a program of energy reform along the lines proposed by the World Bank. But it rode the push to fully privatize the sector and its power system has over the past decade evolved in ways that has preserved its basically public nature. Significantly, in recent years the Government of Kenya (GoK) has increased the size of its stake in the power system, and it has pursued a public rural electrification program that increased access to electricity to levels that far exceed those of many other SSA countries.

However, Kenya's story warrants detailed consideration because it reveals the conflicting priorities of neoliberal policy and the public alternative. Countries that wish to pursue a *public pathway* approach in future may face similar circumstances, and unions need to be alert to the likelihood that the struggle to reclaim the power sector will face internal and external opposition. Just as the neoliberal standard model has been resisted in many countries over a period spanning two or three decades, then the reassertion of public ownership and control may turn out to be a protracted process.

Energy and Independence

The Kenyan economy performed relatively well in the first two decades after independence in 1963. Real GDP grew at an annual average rate of 7 percent. During this period the Kenyan power sector was fully public. Electricity was produced by the Kenya Power Company (KPC) and the Tana River Development Authority (TARDA), under the management of Kenya Power and Lighting Company (KPLC) that was established in 1983. The power-generating companies sold electricity to KPLC, which was responsible for the transmission and distribution.³²¹

³²⁰ Rudnick, Hugh; Velasquez, Constantin. 2019. Learning from Developing Country Power Market Experiences : The Case of the Philippines. Policy Research Working Paper; No. 8721. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31189> License: CC BY 3.0 IGO."

³²¹ In 1993 the IMF noted "There has been no private sector participation in the electricity area, although the Government has decided to allow private sector power generation in the near future." <https://www.elibrary.imf.org/view/journals/002/1995/133/article-A001-en.xml#A01lev1sec4>

From a climate and public health perspective, public energy brought about positive changes in the energy mix. By the late 1990s, public hydroelectric systems accounted for 87 percent of the country's electricity and geothermal generated an additional 7% —both renewable sources of power. The country had previously relied on imported diesel to generate electricity, but the use of diesel oil for power fell to just 6% of electricity supply. Roughly 50% of the urban population had access to electricity during this period; however, rural electrification was below 5%. In the late 1990s, the national electrification level was 14.5%.³²²

Before its embrace of structural adjustment programs and the “standard model” of power sector privatization, the World Bank had helped finance new power capacity in Kenya, providing seven loans and credits totaling US\$307 million between 1971-1988. Three of the loans/credits financed hydroelectric development on the Tana River and while the other four financed geothermal projects. Four other loans/credits totaling US\$80 million were made for reforestation and related infrastructure. It seems reasonable to conclude that, had this form of financing continued, Kenya's public system would have made further advances in terms of electrification levels. [PUP FN]

These projects were financed at a time when Kenya had, since independence, been governed by the Kenya African National Union (KANU). A party of independence with clear nation-building aspirations operating within a multiparty political environment had, over the course of roughly three decades, become a party dominated by a few individuals that seriously constrained opposition parties. Domestic movements seeking to restore a multi-party system were severely and often violently suppressed. In the late 1980s to early 1990s, political turmoil took its toll on the economy. As the political situation deteriorated, in late 1991 rich countries decided cut off development aid to Kenya in the hope that it might accelerate political liberalization. The KANU government consented to liberalize the political system and multi-party elections were held in 1992 and again in 1997. KANU won both elections, although the ruling party continued to be heavy handed in dealing with the country's opposition parties. Kenya hit a deep financial crisis in 1993, a crisis that would have major consequences for the country's power sector. Annual GDP growth fell to zero, while annual inflation reached 34%. The government's budget deficit exploded.

Structural Adjustment 1.0

Internal political turmoil clearly contributed to Kenya's economic crisis. But some dimensions of the crisis were beyond Kenya's control. The IMF referred to “adverse exogenous shocks” that included “irregular rainfalls, a large influx of refugees from neighboring countries, and substantial declines in prices of Kenya's export products.”³²³ The global rise in global oil prices added to Kenya's financial troubles, as did the prolonged recession in industrial countries and the deteriorating terms of trade for Kenya's exports of raw materials.

Many countries in the South were plagued by balance of payments deficits and heavy external debts during this period, and rising interest rates further contributed to the burden of debt servicing. Confronted by the economic crisis, even politically stable countries often turned to

³²² <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=KE>

³²³ In 1993 the IMF noted “There has been no private sector participation in the electricity area, although the Government has decided to allow private sector power generation in the near future.”<https://www.elibrary.imf.org/view/journals/002/1995/133/article-A001-en.xml#A01lev1sec4>

commercial lending institutions for infusions of capital that might help them weather the storm. However, requests for credit were frequently declined by commercial lenders. Facing rising debt and inflation levels and increasingly desperate for support, countries turned to the IMF and World Bank for help.³²⁴ The “help” was invariably packaged as a structural adjustment program that imposed conditionalities on the borrowing country.

In Kenya’s case, in 1994 the GoK and the IMF agreed in 1994 that austerity measures were necessary to stabilize the country’s finances. The GoK went along with the structural adjustment agenda. The World Bank and the IMF threatened to pull out of the energy sector unless the GoK introduced “standard model” reforms.

Significantly, the World Bank had targeted Kenya’s power system for privatization several years before the political crisis of 1991-1993. In the late 1980s the Bank acknowledged that “new investments were needed in the power sub-sector by the mid 1990's to avoid supply shortages.” However, the Bank “could not support new investments in the absence of an agreement on sector reform policies and program for implementation.”³²⁵ The Bank blamed the government for the supply shortages, asserting that, had it introduced reforms sooner, loans would have been restored. According to a 1997 World Bank report, delaying reform produced a situation where “Kenya is now experiencing electricity shortages which are imposing a substantial cost to the economy and restraining economic growth.”³²⁶

The Bank pointed to the incapacity of the state-owned system to keep up with rising energy demand, which it saw as a clear marker of inefficiency. The Bank seemed to overlook the fact that a failure to meet demand is also a problem of inadequate supply. In Kenya’s case, supply shortages were directly tied to the lack of finance, and the lack of finance was tied to the decision by the Bank not to fund public energy projects.³²⁷

As was the norm (then, and now), the Bank also accused the GoK of making electricity too affordable. Of course, the thinking behind the public provision of energy is that affordable electricity would stimulate economic growth which would, in turn, express itself in growing demand for power. Keeping up with the demand would require both capital and energy planning, neither of which should have become an obstacle. The Bank could have continued to provide long term debt financing and the public utility could have developed plans to build capacity. But this approach was not consistent with the Bank’s “standard model” of privatization and was therefore unacceptable. According to the Bank, for generation to catch up with demand, Kenya would need *private* investment, not more public borrowing. Importantly, the World Bank decided to withhold financing until the reforms had gotten underway.³²⁸

³²⁴ Stokke Olav, *Aid and Political Conditionality*, Frank Cass, London 1995 pp.1-60 .

³²⁵ World Bank 1997, *Kenya: Energy Sector Reform and Power Development Project*

³²⁶ World Bank 1997, *Kenya: Energy Sector Reform and Power Development Project*

³²⁷ The Bank first criticized public systems for ensuring that supply of electricity would be one or two steps ahead of demand (“excessive capacity”) and then criticized for failing to meet demand. For many utilities, this set up a “whatever you do, you will fail” scenario.

³²⁸ The World Bank blamed the government for deepening the power supply crisis, “Because of the long time it has taken the GoK and the Bank to reach agreement on sector reform policies, it has proved difficult for the GoK to mobilize resources for the required investments, thus resulting in the current electricity supply shortages.” See: World Bank 1997, *Kenya: Energy Sector Reform and Power Development Project*. [link needed] But according to

Unbundling and Shrinking Public Power

The Bank urged the GoK to show it was serious about implementing reform. The GoK should do this by creating of an “enabling environment” for the private sector, a term that both the Bank and the Fund were fond of using as far back as the 1990s, and their affection for the term continues to this day. The GoK complied.

The GoK introduced a 60% increase in electricity tariffs [year] and cut KPLC staff by 17%.

Targeting the public utility (KPLC), the IMF called for “further improvements in the customer/staff ratio,” which led to more firings. For the IMF, stabilizing KPLC’s finances was an important first step but the long-term solution was privatization.

In 1996 the GoK stated its intention to “unbundle” the power sector, separate its regulatory and commercial functions, promote private-sector investment, and make space for IPPs. The Electric Power Act of 1997 provided the legal architecture for the reform. In its *Letter of Sector Policy*, the GoK announced that the power sector would be required to operate “on a commercial basis without burdening the Government budget.” [ref needed]

Unbundling Kenya’s power system turned out to be a decade-long process. In 1997, the publicly owned company, the KPLC was split into two parts: a new entity, the Kenya Electricity Generating Company was formed (KenGen). KenGen, took over all publicly owned power plants, and KPLC retained transmission and distribution. KenGen was listed on the Nairobi Stock Exchange in 2006, which was essentially the next step for “standard model” privatization.³²⁹

Following the passage of the Energy Act in 2006, the electricity transmission infrastructure function was carved out of KPLC and transferred to the newly formed Kenya Electricity Transmission Company (KETRACO). The Act also established the Rural Electrification Authority (REA).

Summing up this period, prominent neoliberal energy scholar and researcher Anton Eberhard writes, “The Government [of Kenya] unbundled the electricity sector under pressure from foreign donors. Key donors, including the European Development Bank, Germany, Japan and the World Bank, threatened to pull out of the energy sector unless parliament proceeded with the enactment of an Energy Bill.”³³⁰ According to Eberhard, one of the main drivers of the reforms was “decades of poor performance by state-run utilities.”³³¹ This disproportionately attributed the lack of capacity and the shortage of available finance for investment to the public utility. In other words, factors *internal* to Kenya caused the crisis. Meanwhile, *external* factors – unequal terms of trade, the impact of debt, all of which contributed to the so-called “poor performance” of the utility – were downplayed.³³²

Eberhard, the decision to cease lending “compounded the power sector’s difficulties in raising resources for investment. When the aid embargo was subsequently lifted. difficulties in reaching agreement with donors on sector policies further delayed new investments in power generation. As a result, the power system is inadequate to meet current demand.”

³²⁹ <https://africanfinancials.com/document/ke-kegn-2006-ps-00/>

³³⁰ <https://www.gsb.uct.ac.za/files/KenyasLessonsFromTwoDecades.pdf>

³³¹ Eberhard <https://www.gsb.uct.ac.za/files/KenyasLessonsFromTwoDecades.pdf>

³³² Eberhard, A., and K. Gratwick. 2008. “Demise of the Standard Model of Power Sector Reform and the Emergence of Hybrid Power Markets.” *Energy Policy* 36 (10): 3948–60. The authors acknowledge that “although poor

IPPs in Kenya: Take-or-Pay

In a 2020 report, the World Bank assessed the impact of the “standard model” reforms of the 1980s and 1990s. It noted that, during the pre-reform period, Kenya’s public utility had already achieved full cost recovery, but simply lacked the money to finance further capital-intensive new generation projects. In other words, the KPLC was a well-run public utility. However, *following* the neoliberal reforms, “Kenya saw cost recovery decline despite hefty tariff increases because costs increased even more rapidly.”³³³

But why did costs increase faster than tariff increases in Kenya? The sharp rise in tariffs were intended to help stabilize the finances of the KPLC, not make the finances of the KPLC worse than before the reforms were introduced. The Bank does not say it, but increasing costs were due to the introduction of the for-profit IPPs.

Beginning in the late 1990s, IPPs (including multinationals like Spain-based Union Fenosa) moved into Kenya’s power sector, and PPAs proliferated.³³⁴ The terms of the PPAs negotiated with the IPPs were invariably involved “take or pay” government-backed commitments. These commitments ensured that the utility (“the offtaker”) would either “take” the power produced, “or pay” for the power produced even if it is not needed. A take-or-pay provision in a PPA guarantees the power producer a pre-determined amount of revenue (through “capacity charges”) on the condition that the power producer makes the power available to the utility. This, in turn, allows the IPP to cover its costs (which include profit margins and interest payments).

Take-or-pay provisions are critical for the IPP to obtain project financing because the provisions guarantee normally lucrative returns on investment for up to 25 years. A move by the Government to end a take-or-pay obligation would amount to a breach of contract. Such a breach would set off alarm bells with other IPPs and cost the government potentially large sums of money in damages that may amount to larger sums than the payments required under the take-or-pay clauses. Needless to say, PPAs with take-or-pay provisions ensure profits for both the IPP and the lender, thus “de-risking” the investments. However, these arrangements have been criticized for unloading risk and “system costs” on to the “offtaker,” which is either the utility or the government. Many take-or-pay contracts stipulated that the IPP should be paid in US dollars or Euros, thus unloading the risk of exchange rate fluctuations on to the utility or the government.³³⁵

Kenya and Ghana: Pushback Against IPPs and Extortionate PPAs

performance prompted power sector reform, the causes of such performance were multifold and deep, which helps to explain the mixed outcomes of power sector reform.”

³³³ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Sustainable Infrastructure Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 264

³³⁴ <http://www.psir.org/reports/energy-privatisation-and-reform-east-africa.html>

³³⁵ East African Online February 23, 2004 Westmont Opts Out of Kenyan Operations

In 2003, the GoK expressed dissatisfaction with the performance of the energy sector. It noted that, despite the reforms, the introduction of IPPs, etc., electricity in Kenya was still unreliable and expensive. Charges of corruption also surfaced.³³⁶ An audit report on KPLC in 2004 exposed improper dealings, inflated prices, and profiteering by the IPPs.³³⁷

A 2008 study would reveal that Kenya was part of an emerging trend. Across the SSA region, real tariffs almost doubled over the period 2001–05, but the cost recovery ratio declined.³³⁸ However, the GoK concluded that the high prices embedded in the PPAs necessitated deeper reforms. The power market was *not competitive*. If it were competitive, the GoK reasoned, the cost of the PPAs would fall because the IPPs would need to compete amongst themselves for contracts.

During this time, Ghana—also a target of structural adjustment in the 1990s—began to question the PPAs and the role of the IPPs. During post-independence, Ghana’s public utility had been performed well in terms of cost recovery, but access to electricity had increased at a very slow pace.³³⁹ The PPAs has been signed when Ghana was facing a supply crisis and imminent loadshedding. The crisis was exploited by the IPPs. The Africa and Middle East Resources Investment (AMERI) company built a 250 MW combined cycle gas plant and charged \$510 million, or roughly twice the price of comparable projects.³⁴⁰ Thirty-two PPAs had been procured through unsolicited bids that placed a high financial burden on the offtaker. This was accompanied by nondisclosure of essential information—essentially, the PPAs were negotiated “behind closed doors.” Ghana found itself in a situation where additional capacity was well in excess of demand (or “load”), but the PPA system meant that, in order to generate revenue for the IPP, the offtaker had to purchase all of the power added as soon as it became available.

A 2019 investigation conducted by the government of Ghana concluded that “Uncoordinated procurements of IPP projects resulted in a glut in installed generation capacity...Ghana’s energy sector as it exists now is not financially sustainable.” The report concluded that electricity and

³³⁶ Westmont Power, a Malaysian company was accused in 2003 of paying bribes to Samuel Gichuru, former chairman of the Kenya Power and Lighting Company. It was ordered to cut its tariffs in half, and left Kenya when its contract expired in 2004. See: PSIRU, David Hall 2006 <https://allafrica.com/stories/200312110418.html> Africa News December 11, 2003: Energy; Energy Rip-Off: How Supplier Raked in More Than Sh18b

³³⁷ <https://allafrica.com/stories/200312110418.html> Africa News December 11, 2003: Energy; Energy Rip-Off: How Supplier Raked in More Than Sh18b

³³⁸ Eberhard, A., and K. Gratwick. 2008. “Demise of the Standard Model of Power Sector Reform and the Emergence of Hybrid Power Markets.” *Energy Policy* 36 (10): 3948–60.

³³⁹ Foster, Vivien, and Anshul Rana. 2020. *Rethinking Power Sector Reform in the Developing World*. Sustainable Infrastructure Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 267

³⁴⁰ Institute of Economic Affairs, *Accra Energy for Growth Hub, A Case Study of Ghana’s Power Purchase Agreements*, March 2021, <https://www.energyforgrowth.org/report/a-case-study-of-ghanas-power-purchase-agreements/>

gas sectors were close to \$2.8 billion in arrears and with 30% payable to the private sector. The deficit was expected to grow to more than \$12.5 billion by the end of 2023.”³⁴¹

Faced with rising capacity charges under the Take-or-Pay system, in 2019 Ghana chose to cut its losses. It cancelled 11 PPAs and paid out \$402 million in compensation rather than paying an annual average capacity cost of \$586 million over the remaining period of the PPAs. If the PPAs were honored, it would have cost the country \$7.6 billion cumulative from 2018 -2030. The governments estimated that cancelling the PPAs would save \$7.21 billion over a 13-year period.³⁴² A further seven PPA with a total capacity of 2,960 MW were postponed.³⁴³

But cancelling PPAs still leave Ghana’s power sector in financial distress—a problem the IPPs were supposed to help solve by producing power less expensively than state-owned companies. This sum is equivalent to 33% of the government’s 2018 tax revenue. The government was forced to issue bonds totaling almost \$1 billion in 2017 and 2018 to pay 50% of legacy debt owed to private interests and banks.³⁴⁴

The huge damage inflicted on the finances of Ghana’s power sector and government because of the IPP system and Take-or-Pay arrangements helps explain why the energy transition in many parts of the South has provoked opposition and resistane. IPPs mean higher costs and the complete neglect of transition planning. Expressing concern about Ghana’s efforts to grow renewable energy, a market-friendly NGO observed:

PPAs are often signed for durations of 25 to 30 years. The long-term nature of these contracts coupled with their lack of transparency makes power sector planning difficult... But since existing PPAs created an oversupply of conventional sources alone, the sector may already be too crowded to significantly grow renewable power. Any further attempt to increase renewable generation may need to wait until a thermal plant retires or a PPA expires. Issuance of renewable generation licenses has halted since October 2018, and only 3 of the existing 124 licenses have been developed.

At this point the World Bank should have acknowledged that its policy had turned a solvable problem (the public power utilities need to secure affordable financing) into a policy disaster that cannot be repaired without rejecting the neoliberal approach to energy transition entirely.

Unfortunately, the government of Ghana and World Bank believe the solution is to ensure that

³⁴¹ http://energycom.gov.gh/files/2019%201111%20ESRP%20ESTF_Clean_v3.0redacted%20final.pdf

³⁴² <http://www.reportingoilandgas.org/govt-cancels-11-power-agreements-state-to-pay-us402m-in-settlement/>

³⁴³ The change in Ghana’s energy mix is worth noting. In 2000, hydro plants generated the highest proportion (about 92%) of electricity requirement whereas thermal plants generated the remaining 8%. However, in 2021, the generation mix stood at approximately 34.1% from hydro against 65.3% from thermal and 0.55% from renewables. The share of renewables in the generation mix in 2021, represents a doubling of its 2020 share of 0.28%. See: <http://www.energycom.gov.gh/files/2022%20Energy%20Statistics.pdf>

³⁴⁴ <https://www.energyforgrowth.org/report/a-case-study-of-ghanas-power-purchase-agreements/>

future PPAs are signed through competitive tendering to heighten transparency. Other countries—South Africa among them—have tried this approach but the problem does not go away: IPPs will not invest without the kind of guaranteed returns that PPAs provide. Competitive tendering or auctions can lower the cost of PPAs, but if the PPAs are not attractive to the IPPs, then the investment will not materialize, and governments will be pouring more money into “de-risking” investments than would be the case if they had financed the projects themselves.

Returning to Kenya, the ballooning costs of IPP-generated power would, in 2021, lead to the GoK setting up a Task Force to investigate the PPAs. In 2020, KPLC reported a loss of \$67 million. IPPs accounted for 47% of power procurement costs (FY2020) but provided only 25% of the country’s power. Meanwhile KenGen (70% publicly owned) accounted for 48% of procurement costs and generated 72% of Kenya’s power. Released in September 2021, the Task Force report also concluded that the IPPs had raised costs, and the PPAs were not transparent.

The Task Force documented the problems with IPPs in several countries. But rather than recommend the rejection of the PPA system and a return to tried and tested public procurement model, the Task Force praised the REIPPPP program in South Africa for lowering the costs of the PPAs by introducing competitive auctions. But South Africa’s REIPPPP program has created a protected market for IPPs, not a competitive one. Under the REIPPPP auction system, developers compete against each other in order to win the contract to supply a pre-agreed amount of capacity bid and the winner secures what is normally a 20-30 year PPA where revenues and returns are guaranteed. At that point, any competition ends. Under the current REIPPPP program rules, the public utility (ESKOM) will still be legally bound to purchase the power generated by the IPPs. This will apply to IPP-generated nuclear or coal-fired electricity as much as it currently does to wind farms or solar arrays. So the bid-winning IPPs will be part of the private sector, enjoying profits secured by ESKOM’s legal obligation to purchase IPP-generated power.

Utilising the auction system, governments plan capacity additions based on what they think is required to meet projected demand and achieve the desired energy mix. Governments frequently make mistakes in estimating demand - it is almost impossible to predict the impact of economic boom and bust cycles on energy needs, or to respond quickly to shifting demand trends. Then the social and economic costs of the misjudgement (or of going beyond reasonable “capacity margins”) must be absorbed by the public Treasury, passed on to end users, or some combination of the two. The IPPs want to “build and sell” and are therefore not exposed to the same kind of risk as a public utility like ESKOM.

[EDITOR: a para or two on the crisis of the REIPPPP and rising costs will go here]

Kenya’s Public Energy Future

If we take stock of the current situation in Kenya, we can see that the stage is set for a return to more, not less, public ownership and control of the country's power system. Consider the following:

- Today most of the country's generation remains publicly owned. KenGen is 70% owned by the GoK, and the government's share has increased from 50.1% [date when increased stake occurred]. KenGen provides a total of 80 percent of all electricity consumed within Kenya. The company uses generates most of its electricity from renewable sources of power, principally hydro, geothermal, and wind. Hydro is the leading source of electricity, with an installed capacity of 677.3MW, which is 72.3 percent of KenGen's installed capacity.
- Kenya's transmission system is 100% publicly owned. Incorporated in 2007, the Kenya Electricity Transmission Company (KETRACO) was created from the "unbundling" process promoted by the World Bank, but it remains public.
- Kenya's distribution company, KPLC, also remains public. The debts it has incurred are largely attributable to the "Take-or-Pay" system that has been so debilitating to public utilities during the past 10-15 years.
- The Rural Electrification Authority is a fully public entity, and its work exemplifies the efficacy of a public approach to electrification. (See below)

To this we can add that, despite the country's non-adherence to the World Bank's standard model of privatization, from 2010-2017 the Bank has helped finance roughly \$1.4 billion in power sector projects.³⁴⁵ And the World Bank is, of course, itself "publicly owned" in the sense that it is a public finance institution sustained by taxpayers.

A *public pathway* approach can build on this strong public foundation. What currently stands in the way is the perception on the part of the GoK that the costs of PPAs can be lowered once the IPPs are required to participate in capacity auctions. But the real reason for the high electricity tariffs for IPP-generated power is not the lack of competition. Rather, the real reason is the need to borrow capital at higher rates of interest (higher than for public companies), and to secure locked-in returns for private investors.

A Model for Africa? Kenya's Public Rural Electrification Program

In 2007 the GoK adopted its *Vision 2030* for developing the economy.³⁴⁶ A Rural Electrification Authority (REA) was established at a time when only 4% of the rural population had electricity. In 2018 it was re-named the Rural Electrification and Renewable Energy Corporation (REREC).

³⁴⁵ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 105 lists Bank-funded projects for the period 2010-2017: 2010-11: Generation projects, US\$500m; 2012: Regional transmission interconnection, US\$441m; 2015: Modernization of sector, US\$450m; 2017: Off-grid access, US\$150m – a total of almost \$1.4 billion

³⁴⁶ Office of the Prime Minister Ministry of state for Planning, National Development and Vision 2030 <http://vision2030.go.ke/wp-content/uploads/2018/05/Sessional-paper-No.-10-of-2012-On-Kenya-Vision-2030.pdf>

As noted above, today almost 62% of Kenya’s rural population has some access to electricity.³⁴⁷ This is a level of electrification that is far higher than the average for sub-Saharan Africa where, according to World Bank data for 2021, just 27% of the rural population has access.³⁴⁸

Before we examine how Kenya was able to make serious headway in terms of extending access to electricity, it is important to note that the World Bank has “packaged” Kenya’s achievements in expanding access as if the 1990s reforms, including the unbundling of the national utility, the introduction of IPPs and “Take or Pay” PPAs, were part of the country’s success story.³⁴⁹

In recent years, however, the Bank has largely given up on the “standard model,” (read: full privatization, marketization, and liberalization. Today it talks about the “hybrid model.” It is important for unions and their allies to be alert to the Bank’s recent shift in terminology, because history tells us that the terminology will be internalized and repeated by Bank functionaries in scores of different national contexts in the period ahead.³⁵⁰

References to the “hybrid model” allude to a productive partnership between market and state, taking the form of a sector-level public-private partnership. This conceals the role of public energy, and in doing so the Bank is both covering up its past mistakes while at the same time giving the impression that, while full privatization would have been preferable, partial privatization is better than no privatization at all. Kenya’s success is being presented in a light that shines favorably on the reforms that began in the 1990s. But Kenya’s achievements in addressing energy poverty clearly illustrate the *damage* caused by the reforms.

How, then, did Kenya expand access to electricity? The key to success was simple: The Rural Electrification Authority (REA) was allowed to operate on a non-profit basis. The Program began with a total of 215 rural electrification projects, all of which were funded solely by the GoK. According to the Presidential Task Force on PPAs, the program has reached areas considered “commercially unviable based on a profit-focused offtaker.” At the national level, the government collected 5% from electricity bills and directed the revenue toward financing rural electrification. Contractors were used to build the transmission lines and associated infrastructure, but these assets would publicly owned (by REREC), and the KPLC would handle operation and maintenance.

[note to editor: more on REREC needed here:

<http://emiguel.econ.berkeley.edu/wordpress/wp-content/uploads/2021/03/DEV-ENG-1-s2.0-S235272851530035X-main.pdf>]

³⁴⁷ <https://data.worldbank.org/indicator/EG.ELC.ACCS.RU.ZS?locations=KE>

³⁴⁸ <https://data.worldbank.org/indicator/EG.ELC.ACCS.RU.ZS?locations=ZG>

³⁴⁹ <https://www.youtube.com/watch?v=PvvrJtdxLFk> minute 48.

³⁵⁰ Energy policy specialists began to talk about the “hybrid” model as far back as 2008.

“A hybrid market is emerging where long-term take or pay contracts with IPPs exist alongside publicly owned and operated plants. Might this signal then not a mid point in the standard model but rather a new model altogether?

See: Gratwick, K.N. and Eberhard, A. (2008) ‘Demise of the standard model for power sector reform and the emergence of hybrid power markets’. *Energy Policy* 36: 3948- 3960.

Kenya's push for rural electrification nevertheless draws attention to some of the policy challenges that a *public pathway* approach will have to deal with. From the period 2002 to 2012, households within 600 meters of a low-voltage distribution transformer could apply for an electricity connection at a fixed price of 35,000 Kenya shillings (KES), or roughly \$398 (in 2012 dollars). In addition, households were expected to cover in-house wiring costs. In 2012 annual per capita income was frequently below \$1,000 for most rural households. Not only were the per household connection costs out of reach for the majority of households, those who were connected made little or no contribution to rural economic development. Having an electric light, a small fan, or a television improves quality of life, but on its own achieving a connection is not going to be enough for a household to contribute to the economic output of their small town or village.

From the perspective of the KPLC, the cost of a single connection in an area that was less than a kilometer from grid coverage was estimated to be several multiples higher than the \$398 charged to the household. The higher the number of connections, the heavier KPLC's debt burden became. And with tariffs covering a fraction of KPLC's actual costs, the utility resorted to rationing electricity as a means of saving money.

In China's case, the government subsidized the purchase of small appliances so that poor rural dwellers might feel the benefits of electrification in ways that could also stimulate demand for goods manufactured in China's factories. In many SSA countries, manufacturing capacity is far less developed, therefore subsidies of this nature would likely benefit manufacturing companies located overseas and local retailers.

The Wrongs of Rights?

Of course, those with unwavering faith in the capacity of markets to deliver social and economic benefits (along with a strong aversion to public subsidies) have proposed what they believe are the solutions solution to this problem. For example, Robin Burgess of the London School of and Michael Greenstone, the Milton Friedman Professor in Economics, University of Chicago, are among a group of Friedmanite thinkers who believe that governments should "break the social norm that electricity is a right..." and then introduce market-based policies that can produce a situation where "each additional electricity customer is profitable rather than loss-making"³⁵¹

Given the technical challenges in many developing countries of disconnecting individual users or households for non-payment, these writers suggest "allowing utilities there to cut off areas that are the most egregious offenders." In other words, whole communities should be cut off if electricity theft levels passes a certain predetermined threshold. Another proposed reform relies on "technology to make electricity excludable, therefore making it possible to explicitly

³⁵¹ Robin Burgess et al:

<https://pedl.cepr.org/sites/default/files/JA%203858%20BurgessGreenstoneRyanSudarshan%20ConsequenecesOfTreatingElectricity.pdf>

link payments and supply at the individual level. Smart meters can require payments in advance or allow the utility to cut off household electricity supply remotely.” And if all else fails, “why not aim to privatize distribution in the hope that this leads to a market for electricity?” However, these writers warn, “As long as electricity is perceived as a right by all parties, effective privatization is not feasible.”³⁵²

The 2020 World Bank report *Rethinking Power Sector Reform in the Developing World* pointed to an irreconcilable tension between what is the neoliberal, for-profit model of electricity provision and the public service model. It notes:

Extending access to electricity to the peri-urban and rural periphery often leads a utility into diminishing and even negative marginal returns on investment, particularly if the power consumption of poor households remains very low. Thus, universal electrification cannot be achieved purely by allowing a utility to pursue commercial incentives.³⁵³

Put differently, for the utility the choice boils down to either trying to reach “full cost recovery” or trying to move towards universal access. It is not possible to go in both directions at once. This is because—as we saw in the case of China’s electrification program—rural communities with no electricity are poor and undeveloped. They cannot pay for the full cost of the service because they do not have the money to do so. As a general rule, the more rural the community in terms of its distance from transmission infrastructure, the higher the costs of connection.

A *public pathway* approach would start from the basis that electricity is a human right and should be universally available. The idea that electrification must stimulate economic development in order for the costs of connection to be justified overlooks the immeasurable contribution basic electricity provision can make to human wellbeing.

World Bank: Reckoning and Rethinking

The negative lessons of privatization are important in helping us envisage what a *public pathway* alternative might look like. The first task is to restore the kind of basic planning that epitomized public systems. As Eberhardt has acknowledged:

Planning, procurement and contracting functions, which were previously undertaken by monopoly state-owned utilities now ‘fall between the cracks’ and are either neglected or are performed inadequately.

In the past, the incumbent state-owned power utility generally assumed responsibility for generation expansion planning and, because these utilities were generally run by engineers, the tendency in the past was to plan conservatively, i.e. to build more capacity than was actually needed in order to ensure that the lights never went out. In

³⁵² Robin Burgess et al:

<https://pedl.cepr.org/sites/default/files/JA%203858%20BurgessGreenstoneRyanSudarshan%20ConsequenecesOfTeachingElectricity.pdf>

³⁵³ Foster, Vivien, and Anshul Rana. 2020. *Rethinking Power Sector Reform in the Developing World*. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO.

many cases, these utilities ran into financial difficulties; investment costs were high and tariffs were insufficient to fund the required new investment.

Clearly, what Eberhard draws attention to is the flawed logic and nearsightedness that shaped the neoliberal reform agenda, and it continues to wreak havoc across the Global South. He continues:

Today, the majority of utilities in Africa are under-investing: they simply do not have sufficient financial resources. Pressures have thus grown for power sector reforms which have encouraged the entry of IPPs and new private investment that supplements the utilities' efforts. However, in these hybrid markets [where IPPs and public transmission and distribution companies co-exist] it often became unclear who was responsible for generation expansion planning. Would the private sector, or "the market", simply respond to needs for more power? What was the role of planning? And, if planning was still necessary and important, who was responsible—the utility, the regulator, or the government? And if the government takes over this function, does it have the capacity to undertake timely, flexible and relevant planning?

These questions should have been asked 30 years ago. The neoliberal solution (privatization) went in search of a problem (inefficient public ownership, "poor governance" and lack of capital), made the problems worse (by cutting off access to development finance), and then discovered that private sector involvement in the power sector has created high levels of inefficiency, thwarted investment, compromised energy infrastructure, increased the use of fossil fuels, and still left hundreds of millions of people in the dark.

In 2020, the World Bank concluded:

The end goal of the 1990s [standard] model was to create a competitive market. The supposition at that time was that private investments in power generation could be guided by price signals. The role of the state was seen primarily as the regulator of a privately owned and operated competitive sector, and great emphasis was placed on the creation of a capable regulatory institution and associated legal framework...power sector reform processes worked toward the unbundling of the incumbent utilities and the creation of technical capacity in regulatory agencies outside of line ministries. In practice, power markets proved difficult to establish in all but a handful of developing countries, and even among those countries, price signals have not provided an adequate basis for investment decisions.³⁵⁴

Unions are keenly aware of the deficiencies and inefficiencies that have become associated with SOEs, but the empirical data does not support the claim that SOEs are less efficient or more

³⁵⁴ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO. Page 163. Foster and Rana are quite critical of full cost recovery thinking, in the same way as the latter-day neoliberals sometimes criticize the excesses of "market fundamentalism" characteristic of the policy discourse in the early to mid 1990s.

corrupt than large private sector concerns. And there are many examples of public utilities in the South that, despite the hostile policy environment, are well run and efficient.

³⁵⁵ Furthermore, there is little evidence to support the idea that privatization and marketization has improved efficiency or reduced corruption. From the Enron scandal in California the early 1990s to the price manipulation of IPPs in Kenya, the Philippines, Mexico, there is considerable evidence that private interests have instigated their share of corruption. Furthermore, when the legal cards are stacked in favor of private concerns, what might in some contexts qualify as corruption is in other contexts perfectly within the law.³⁵⁶

Pakistan's Hydroelectric Projects

For further evidence of just how absurdly damaging neoliberal policy has been in terms of perpetuating energy poverty, we need look no further than Pakistan. Announced in 2021, the country's long-term energy plan stated it intended to add 14 GW of both large and small hydropower capacity by 2030, projects that, while not without environmental problems, can provide large amounts of renewable energy and help avoid carbon-intensive development. However, projects such as these require credit support from the MDBs (such as the World Bank and Asian Development Bank) and any delay in acquiring financing will, notes IEEFA, "likely lead to a supply-demand mismatch in the country prompting a switch back to fossil fuel-based power to bridge the gap." From a social, climate and "public goods" perspective, construction should begin on those hydro projects as quickly as possible.

In 2021 the Government of Pakistan was downgraded by the main credit rating agencies, (Moody's, Fitch and S&P), on grounds that the country's poor economic prospects. Of course, the downgrade will likely damage the government's ability to raise capital for the same hydro projects that could play an important role in the fight against energy poverty and insecurity, as well as climate change. The agencies also downgraded the public company that would be responsible for developing new hydropower, namely, the Water and Power Development Authority (WAPDA). Moody's cited WAPDA's "close linkages with the government" as a result of the "government's full ownership and direct supervision" of WAPDA. It is a tragic irony that among the reasons for the credit agencies downgrading both the government and WAPDA the impact of floods and Covid19 on the country's economy.

It is worth noting that in 1980 Pakistan announced that it planned to the 4.5GW Diamer-Bhasha dam, the world's largest public hydroelectric project. But World Bank, Asian Development Bank and IMF were unwilling to finance the project. However, in May 2020 the Pakistani government entered into a \$2 billion joint venture with publicly owned China Power and Pakistan's own public construction company, Frontier Works Organisation (FWO) for the construction of the

³⁵⁵ Daniel Chavez articles on Uruguay and Costa Rica

³⁵⁶ David Hall notes "There is clear evidence of corruption associated especially with procurement processes of all kinds, including the contracts with IPPs. One advantage of a strong public sector policy should be to reduce the opportunity for this kind of corruption. It also needs to be associated with a consistent public demand for total transparency of all documents associated with procurement contracts or privatisation, for public scrutiny and debate, and for firm disciplinary policies on officials and politicians implicated."
<http://www.psir.org/reports/energy-privatisation-and-reform-east-africa.html>

dam.³⁵⁷ Pakistan’s government issued a green bond to finance the project, raising \$500 million of capital.

Ecuador’s Public Hydropower Buildout

Returning to SSA, no one knows for sure how the subcontinent’s electricity systems might have evolved if the public systems had remained intact, fully resourced, and able to pursue their original mandate. But a glimpse into what might have been possible—and could *still* be possible—is provided by Ecuador during the period when leftist Rafael Correa was President.

Elected in late 2006, Correa’s political message was “markets do not govern, states do.” His election produced a new Constitution that was adopted (with 63.2% approval) by way of a referendum. Article 313 of the new Constitution read: “The State reserves the right to administer, regulate, monitor and manage strategic sectors” among them “energy in all its forms”³⁵⁸

In 2008 energy poverty levels in Ecuador were above 50% in the rural areas. Hydropower represented 44 per cent of power generation (1,640 MW installed capacity).³⁵⁹ In 2007 Correa announced the simultaneous construction of 8 major hydropower projects.³⁶⁰ One hydroelectric system, the 1,500 MW Coca Coda Sinclair, became operational in 2016 and was able to meet 30 per cent of domestic electricity demand. Currently, Ecuador has more than 5GW hydropower capacity in operation and has added more than 600 kilometers of high-voltage transmission lines to extend the grid.³⁶¹ Ecuador’s hydropower today generates more power than all the solar panels that are currently installed in SSA, by far.

The build-out of public hydropower was controversial. The projects disrupted indigenous communities and were financed by Chinese and Brazilian public banks. Ecuador paid back the money borrowed by selling oil to China at a below market rate—therefore using fossil fuels to cover the costs of electrification. But the story of Ecuador illustrates how a public approach opens pathways to electrification that departs from the neoliberal script.

Mexico’s Restoration of Public Energy Companies

More recently, the election in 2018 of Andrés Manuel López Obrador, (known as “AMLO”) and his party, the Movement for National Regeneration (Movimiento de Regeneración Nacional in

³⁵⁷ <https://www.dawn.com/news/1556951/rs442bn-accord-for-construction-of-diamer-bhasha-dam-signed>

³⁵⁸ The National Assembly of Ecuador, 2008.

³⁵⁹ <https://www.hydropower.org/country-profiles/ecuador>

³⁶⁰ “Nothing can stop us in our decision to exercise Energy Sovereignty, which means nothing more than the use of the authority granted to us by the people to make decisions that will provide them with economic and social benefits (...) We will reduce generation costs by an average of 50%. We will reduce the use of fossil fuels, thus cutting down indirect subsidies to private generators.” --Correa Delgado, 2008.

³⁶¹ International Hydropower Association 2020. Country Profiles: Ecuador.
<https://www.hydropower.org/country-profiles/ecuador>

Spanish, or MORENA), has put Mexico at the center of the struggle to both defend and extend public ownership of energy.³⁶²

A top priority for AMLO has been to challenge the neoliberal privatization agenda that the previous president, Enrique Peña Nieto, pursued with fervor during his term of office (2012-2018). In 2013-14, Peña Nieto's administration made more than 20 legislative changes and three amendments to the Mexican Constitution in order to allow for non-Mexican companies to own and invest in the country's energy resources.³⁶³ The reforms aimed restructure Mexico's state-owned energy companies—principally the power utility CFE (Comisión Federal de Electricidad) and the public oil company, PEMEX (Petróleos Mexicanos). Peña Nieto also welcomed renewable energy multinationals as "independent power producers" (IPPs) guaranteeing their profits by way of PPAs and thus burdening the CFE with additional costs.

Commenting on the neoliberal reforms of previous presidents, in 2021 AMLO stated, "It is time to correct the course of the policy of surrender that has been imposed on the energy sector."³⁶⁴ He reiterated that PEMEX and CFE (both state owned companies in, respectively, oil and electricity) were "strategic and indispensable for the independent and sovereign development of our nation." This, he wrote, "translates into not continuing with the privatization of the energy sector" and "putting a stop to juicy private business... The granting of subsidies of any kind to private companies in the energy sector should be abolished."³⁶⁵

During his campaign, AMLO said he planned to restore Mexico's energy sovereignty. Following his election, the government took measures to restore PEMEX and CFE as pre-eminent public institutions. However, AMLO went further. In early 2019 his government postponed the scheduled renewable energy auctions, thus imposing an indefinite moratorium on new wind and solar projects—a move that provoked international opposition from renewable energy interests as well as national governments (principally the US and Canada) and the European Commission. [refs needed]

Despite their obvious differences, AMLO's struggle raises a similar set of questions to those raised by the example of Ecuador. Both draw attention to the need for public control of energy as part of an energy sovereignty agenda. In both cases, reclaiming control can, in principle, open

³⁶² Memorandum, from Andres Manuel Lopez Obrador, President of Mexico to Public Servants and Members of Energy Sector Regulatory Bodies.

<https://www.bnamericas.com/en/analysis/amlo-memo-seen-as-threat-to-investment-in-mexicos-energy-sector>

³⁶³ <https://www.bakerinstitute.org/media/files/files/b7ccc9ca/mex-pub-mextradeamlo-041919.pdf>

³⁶⁴ Memorandum, from Andres Manuel Lopez Obrador, President of Mexico to Public Servants and Members of Energy Sector Regulatory Bodies.

<https://www.bnamericas.com/en/analysis/amlo-memo-seen-as-threat-to-investment-in-mexicos-energy-sector>

³⁶⁵ Memorandum, from Andres Manuel Lopez Obrador, President of Mexico to Public Servants and Members of Energy Sector Regulatory Bodies.

<https://www.bnamericas.com/en/analysis/amlo-memo-seen-as-threat-to-investment-in-mexicos-energy-sector>

the door to a public approach to the energy transition whereby states expand or recover their assets and generate their own electricity.

However, in Mexico's case, energy sovereignty entails not entering into long-term power purchase agreements (PPAs) that are lucrative for private investors but debilitating from a public perspective. Rejecting the standard P3 approach, the Mexican government is currently moving forward with the Puerto Peñasco solar project, a "public-public partnership" between the national utility and the state of Sonora. It will be the largest photovoltaic plant in Latin America (420MW), and it will be publicly owned and operated. The \$1.65 billion dollars needed to build the project will be financed by DFIs at low interest rates.³⁶⁶

However, environmental groups and the pro-business right in Mexico maintain that AMLO's policy will lock in more oil and gas production and refining and therefore impede the transition away from fossil fuels.³⁶⁷ The proposed repeal of the neoliberal reforms will, it is claimed, scare off investors in wind and solar energy and put Mexico on the wrong side of the international effort to address climate change. According to one left commentator, "The [MORENA] administration seems bent on a fossil-fuel future, which is no future at all... Mexico is not on the path to fulfill its commitment to move to 35 percent renewables by 2024."^{368 /369 /370 /371}

Mexico's political struggle over energy draws attention to the problematical features of the "fossil fuels bad, renewable energy good" binary that has tended to inform the politics of the mainstream environmental movement. As we develop a *public pathway* alternative, we need to be mindful of current energy realities. In the case of Mexico, approximately 85% of the country's energy consumption is currently provided by oil and gas. It imports large amounts of gas from the US, most of it for power stations. It produces a little under 2% of the world's oil, and

³⁶⁶

<https://www.elsoldemexico.com.mx/mexico/sociedad/megaplanta-fotovoltaica-de-cfe-se-financiara-en-su-mayoria-con-deuda-7441977.html>

³⁶⁷ English summary: <https://www.whitecase.com/publications/alert/energy-sector-program-2020-2024>. See also: <https://www.hklaw.com/en/insights/publications/2020/05/analysis-of-applicable-provisions-to-renewable-energies-in-mexico>

³⁶⁸ According to Laura Carlson of CEPR, "The issue is not really foreign investors versus public good, or even the specifics of the reforms, but rather the lack of sustainability and the poorly thought out consequences of the sudden change in the rules of the game for investors, primarily investment funds beholden to shareholders. Mexico is not on the path to fulfill its commitment to move to 35 percent renewables by 2024." See:

<https://www.thedialogue.org/analysis/is-lopez-obrador-upending-the-power-sectors-landscape/>

³⁶⁹ Significantly, the domestic legal opposition to AMLO's proposals has been led by Greenpeace Mexico. In late June 2020, the Mexican Supreme Court granted the injunction and provisionally suspended the government's proposed changes, which included the Ministry's plans to develop element of a publicly driven energy transition through the *Sectorial Energy Program (PROSENER) 2020-2024*. Many green groups claim to have an agnostic approach to who owns and controls energy. According to Pablo Ramírez from Greenpeace Mexico, "We have no particular interest...how renewable energy is generated, whether it is public or private." <https://twitter.com/greenpeacemx/status/1329586444197912579?s=08>

³⁷⁰ English summary: <https://www.whitecase.com/publications/alert/energy-sector-program-2020-2024>. See also: <https://www.hklaw.com/en/insights/publications/2020/05/analysis-of-applicable-provisions-to-renewable-energies-in-mexico>

³⁷¹ <https://dialogochino.net/en/climate-energy/37327-mexico-blocks-private-renewable-energy-expansion/>

production levels have been declining for years. Today Mexico exports a significant amount of crude oil, but it is a net importer of refined petroleum products.³⁷²

For now, Mexico has a choice: it can either produce and refine more oil domestically and thus reduce its imports, or it can reduce domestic production and refining, and increase its imports. Put differently, no amount of wind and solar power is going to replace the need for oil and petroleum. Reducing dependence on the latter will require economy-wide electrification of transport, as well as heating and cooling systems. This is a decades-long process that will require the development of technologies (battery storage, for example) and supply chains over which Mexico currently has no meaningful control. And if Mexico is to decarbonize its electricity system, it will need to do much more than just install windmills and solar panels more or less randomly. The national grid must be upgraded, and the entire system must be honed to deal with increasing levels of variable or intermittent renewable energy generation. These realities lie at the heart of the challenge to move away from fossil fuels in Mexico and in scores of countries across the Global South.

If successful, the fight for energy sovereignty in Mexico opens a range of possibilities for a pro-public energy transition. By reasserting the need for energy planning with the state at the center, the government can begin to create a platform for an approach to climate protection that is liberated from the concerns of investors, is more socially just, and ultimately more effective in terms of reaching climate targets.³⁷³

The Role of Public Utilities Today

This fourth sub-section notes how a growing number of mainstream voices are beginning to recognize that state-owned enterprises (SOEs) may be essential to the effort to reach climate targets, not least because, long before neoliberal policies attempted to turn them into for-profit capitalist corporations, many SOEs once operated under a public service and nation-building mandate. Nowhere do these voices call for renationalization or the reversal of neoliberal reforms—at least not yet. But if SOEs can play a role in the energy transition that private companies are unable to play because of concerns about “returns on investment,” then the case against renationalization completely disappears.³⁷⁴

In 2020, the World Bank acknowledged that SOEs had historically played a highly significant role in addressing energy poverty in the South. The report’s conclusion is worth quoting at length:

³⁷² <https://www.eia.gov/international/analysis/country/MEX>

³⁷³ MORENA has also cancelled both the Mexico City airport expansion, auctions for the exploration of oil and gas fields, and plans to renegotiate some long-term gas pipeline contracts. See: https://www.shearman.com/perspectives/2020/05/recent-regulatory-developments-in-the-mexican-power-sector?sc_lang=de-DE. See also: Luis Pazos, “[Santa Lucía o Texcoco. Pérdidas y Ganancias](#),” Centro de Investigaciones Sobre la Libre Empresa, Sept. 2020, at 12; Revista Expansión, “[El Gobierno de AMLO cancela la cuarta subasta eléctrica](#),” Revista Expansión, Feb. 1, 2019; Arturo Solís, “[El gobierno de AMLO cancela subastas petroleras pendientes](#),” Forbes México, December 11, 2018

³⁷⁴

In country after country, the drive for electrification entailed a strong political commitment backed up by sustained public investment typically channeled through a reasonably competent utility. Moreover, for most countries, the main period of acceleration in the electrification process is unrelated to the period when the 1990s reform model was being implemented.

In several of the middle-income countries—such as India, Morocco, and Vietnam—the electrification drive predated the implementation of the 1990s reforms and simply continued in the background through its own established channels even as other reforms took place.³⁷⁵

This is an important admission. In simpler terms, much of the electrification of the South pre-dates the neoliberal period and “reasonably competent” utilities played a leading role. This helps collect the revisionist assertions that electrification was spurred on by energy sector reforms. For example, in Part One we noted how the Asia Development Bank had attributed Vietnam’s success in reaching almost universal access to electricity to the neoliberal reforms of the early 2000s. But the “unbundling” of the national utility, EVN, began only after 2011,

Furthermore, the Bank’s 30-year review notes that the acceleration of electrification in some SSA countries —such as Kenya, Tanzania, and Uganda—occurred years *after* the 1990s reform process, which coincides with the period when developing countries began to question the efficacy of the full-on “standard model” privatization of their power systems.

According to the Bank, “Only two countries (Senegal and Uganda) attempted to apply the principles of the 1990s [standard] reform model to the electrification process itself, by tendering rural concessions to the private sector.” Interestingly, Senegal and Uganda abandoned this effort because they “encountered challenges related to the balance between financial viability and tariff affordability.”³⁷⁶ In plain language, Senegal and Uganda could not implement the standard model because consumers could not afford to pay for the electricity based on based on “full cost recovery” calculations.

SOEs as “Key Development Actors”: More Questioning from the Mainstream

More recently (2022) IRENA concluded that, far from being pushed aside by private interests, state involvement in the power sector was *increasing* in the South. Acknowledging the research conducted by TUED, Transnational Institute and others, IRENA noted: “The drivers that in the past led to the predominance of regulated systems – such as intense grid expansion needs and a post-World War II reconstruction context – are gaining traction today as the transition progresses and socio-economic challenges are high on the agenda.”³⁷⁷

³⁷⁵ Rethinking Power Sector Reform

³⁷⁶ Foster, Vivien, and Anshul Rana. 2020. Rethinking Power Sector Reform in the Developing World. Washington, DC: World Bank. doi:10.1596/978-1-4648-1442-6. License: Creative Commons Attribution CC BY 3.0 IGO.

³⁷⁷ IRENA (2022), RE-organising power systems for the transition, Abu Dhabi.

Along similar lines, a 2016 OECD report pointed to the potential of SOEs to become major players in the push to decarbonize the power sector and reach climate goals. The report noted the advantages SOEs currently have in playing a role in the energy transition: “Preferential financing [for SOEs] and explicit or implicit state guarantees could translate into lower costs of capital, which in turn could be a competitive advantage for renewables where investments are characterized by high capital costs and relatively low operating costs.”³⁷⁸ More recently, the International Institute for Sustainable Development reminded us that SOEs “have a mandate to deliver socially desirable outcomes, a requirement that distinguishes them from their peers in the private sector.”³⁷⁹

As TUED has documented elsewhere, SOEs are better placed to finance and deploy renewables and other low-carbon options than private concerns that need to finance projects in a high-risk environment that inevitably leads to high interest rates. According to the OECD report, “Government mandates can mean that SOEs have performance objectives that go beyond maximising financial returns.”³⁸⁰ The report added, “There are many reasons why governments have established and maintained state ownership in the energy sector...In developing countries where large numbers of people do not yet have access to electricity or other modern energy services, governments may see SOEs as a key development actor prioritising energy access over other commercial or environmental goals.”³⁸¹

For unions, the fact that SOEs were for decades “key development actors” is common knowledge—although different states have had different development priorities depending on their political and class orientation (for example, during Apartheid-period South Africa the state was not concerned about providing universal access, but was very concerned to provide stable power to its mining and mineral sectors.)

The Amsterdam-based Transnational Institute has shown how Uruguay and Costa Rica are world leaders in low carbon energy, and their success is directly linked to the existence of very efficient and vertically-integrated state-owned power companies.³⁸² Since its foundation in 1949, the Costa Rican Electricity Institute (ICE), a company active in the fields of energy and telecommunications, has evolved as one of the pillar institutions of a welfare state that ranks today among the world’s most advanced in terms of social development.

In Uruguay, the National Administration of Power Plants and Electrical Transmissions (UTE) has been the key player in the transition to wind power, positioning the country as the world’s most

³⁷⁸ Andrew Prag (IEA), Dirk Ruttgers and Ivo Scherrer (OECD), STATE-OWNED ENTERPRISES AND THE LOW-CARBON TRANSITION – ENVIRONMENT WORKING PAPER No. 129. 2016 www.oecd.org/environment/workingpapers.htm

³⁷⁹ <https://www.iisd.org/system/files/2022-09/india-state-owned-energy-enterprises.pdf>

³⁸⁰ Andrew Prag (IEA), Dirk Ruttgers and Ivo Scherrer (OECD), STATE-OWNED ENTERPRISES AND THE LOW-CARBON TRANSITION – ENVIRONMENT WORKING PAPER No. 129. 2016 www.oecd.org/environment/workingpapers.htm

³⁸¹ Andrew Prag (IEA), Dirk Ruttgers and Ivo Scherrer (OECD), State Owned Enterprises and the Low Carbon Transition – Environment Working Paper No. 129. 2016 www.oecd.org/environment/workingpapers.htm

³⁸² Chavez, D. (2018) ‘Energy democracy and public ownership: What can Britain learn from Latin America?’, in *Renewal: A Journal of Social Democracy*, (26)4, 34-44.

advanced in the proportion of power generation from modern renewables. UTE remains a highly efficient company in both the reliability of its services and its financial stability. In fact, it is one of the main sources of financing – at zero cost – for the Uruguayan state, as a big portion of the company’s annual revenues are used to support other public services. International credit agencies have awarded UTE the highest investment grade AAA, noting that historically the company has maintained an adequate level of indebtedness that guarantees easy access to the banking and financial market. [Chavez refs needed]

Costa Rica’s national power company (ICE) is a state-owned enterprise that has been able to extend its energy services across the country. It scores extremely well on a wide range of performance measures such as quality, affordability and environmental sustainability. ICE’s management has relied since its foundation in 1949 on an awareness of the importance of the energy company as one of the main pillars of the *modelo solidario* (solidarity model) that has made Costa Rica a leading country in social development. Costa Rican citizens are very much aware of the state company’s contributions to national development, which has propelled them to resist several attempts to privatise the public enterprise in the past decades.³⁸³

Either way, the fact remains that a *public pathway* approach can build on the historical and current achievements of public energy systems, and unions can be confident in the knowledge that SOEs remain big players in the world’s energy systems, and particularly in the South. A 2022 report from the IEA notes: “Public sources underpin spending on grids, especially in EMDEs [emerging and developing economies] where they account for around 80% of total grid investment.” However, “The decline in investment in transmission and distribution in EMDEs in recent years is a worrying symptom of the poor financial situation of many state-owned utilities and the limited fiscal capacity of governments in these regions.”³⁸⁴ As we have seen, underinvestment is a feature of the “death spiral” of the utilities which is a direct consequence of neoliberal efforts to undermine public energy systems in order to create “an enabling environment” for private companies and investors.

We need to be clear: in many instances the persistence of energy poverty in SSA and elsewhere is largely due to the attacks on public energy companies that, until the neoliberal reforms, had made considerable progress in terms of addressing energy poverty through the basic public energy model. In countries—such as Uruguay—where universal access was achieved decades ago and who have resisted both privatization and marketization, SOEs continue to provide an essential service.

Either way, a “reading between the lines” of recent reports from the policy mainstream suggests that there is a growing realization that efforts to privatise power systems in the South have met resistance in one form or another, and such resistance has merit in that it allows

³⁸³ Chavez, D. (2014) ‘An Exceptional Electricity Company in an Atypical Social Democracy: Costa Rica’s ICE’, in McDonald, D.A. (ed.) *Rethinking Corporatization and Public Services in the Global South*. London: Zed Books.

³⁸⁴ IEA, WEI 2022, page 34. The IEA also notes that investment in the energy transition is currently being impeded by “acute financial strains still visible among many (often state-owned) energy companies in emerging and developing economies.” Page 23

governments space to pursue energy-related social and economic goals, including universal access to electricity.

The Challenge of Energy Expansion and Capitalist Growth

The most formidable challenge facing the public pathway alternative is how it might effectively respond to the energy *expansion* documented in Part One. This expansion is an expression of the growth dynamics of the capitalist political economy, coupled with the acceleration of capitalist accumulation in the former colonial world.

A *Public Pathway* approach to addressing energy expansion will require finding ways to make steady progress towards accomplishing a set of difficult tasks.

Although more challenging, reclaiming and restoring national power utilities can also address the challenge of energy expansion discussed in Part One. However, this effort must be accompanied by legal and legislative initiatives that can back energy efficiency and conservation across the economy, thus giving space to national power companies to manage energy generation and use. To achieve this, the neoliberal reforms that turned power utilities into capitalist enterprises must be repealed. The sale of electrons by volume (“volumetrically”) to make profit must cease.

Most of these tasks will require that reclaimed power utilities play a leading role, but both the political and technical challenges are extremely formidable. Four tasks are identified here, each of which will be briefly discussed below. These are:

1. Slow the pace of carbon “lock in.” Engage in “managed decline.”
2. Progressively change the energy mix by decarbonizing energy supply
3. Restore energy planning, control supply chains, develop promising technologies
4. Drive energy efficiency and conservation on a non-monetary, public goods, basis.
Build the institutional framework for public-public partnerships

There are additional governance-related tasks that could also be added, but these will need to be discussed elsewhere.

The Search for a Transformational Politics

Before we examine these challenges and tasks in more detail, it is worth reflecting on some of the work that has already been done within the left in terms of discussing how to deal capitalist growth and energy expansion. What can we learn from the discussions of the past period? And what, if anything, does the *public pathway* have to offer?

In terms of climate change and energy transition, the repeated calls to action by the scientific community, coupled with the untenable nature of “green growth” as a policy framework to address climate change, has given further impetus to various strains of left thinking that have

contributed, in one form or another, to imagining an alternative to capitalism and its reckless destruction of the world's ecosystems. Among the more well-known and frequently discussed strains of thinking are ecosocialism, degrowth, and *Buen Vivir*. These and similar ideas have motivated and informed numerous anticapitalist efforts around the world, as well as the environmental justice and (more recently) the climate justice movement.

As noted at the outset, in the early 2000s many (mostly North-based) unions initially accepted the basic premises of green growth. They viewed the climate threat and rising emissions as an opportunity to call for “green jobs” a protective “just transition”, and an opportunity to restore social dialogue of the kind that emerged in the EU during the early post-war period. The elevation of social dialogue to the status of an ideology is discussed in TUED's 2018 working paper titled *Unions and Just Transition: The Search for a Transformational Politics*.³⁸⁵ Reclaiming energy to public ownership was not part of this agenda.

However, other unions maintained that the climate and broader ecological crisis required a more transformative framework, a narrative that might help build stronger alliances with other social movements. The search for a more transformative framework has drawn on the ideas of ecosocialism, degrowth, and *Buen Vivir* and other strains of radical thinking. These different strains of thinking have thus far had a significant influence on trade union discussions on climate change and the ecological crisis in both the South and the North, and they have motivated and informed the work of numerous social movements, such as the environmental justice and climate justice movements, as well as those fighting for food sovereignty, indigenous rights, energy citizenship, etc.

From Here to There: Public Pathway as a Theory of Transition

Today it is not difficult for various strains of left thinking to unite in opposition to the neoliberal “green growth” narrative. The suggestion that economic growth can continue *as is* because production will be progressively “dematerialized” is simply ludicrous, and yet it continues to be the core concept that lies at the heart of neoliberal climate and energy policy. Equally untenable is the notion that the private sector will lead the transition. The ideas endure, but the facts can no longer sustain the fantasy.

Many trade unionists and social movement activists on the left believe that, although punctuated by recessions and depressions, capitalism and growth are inseparable.³⁸⁶ And growth will inevitably lead to higher energy consumption. Today's energy realities—principal among them being fossil-fuel dependency—means that higher energy consumption will lead to increases in emissions. Efficiencies may lead to the level of emissions rising more slowly for every additional unit of GDP, but emissions will still be on an upward course at a time when climate scientists insist that they need to be falling fast. The idea that growth and emissions can be decoupled, where growth points upwards while emissions levels trend downwards, is

³⁸⁵ https://rosalux.nyc/wp-content/uploads/2021/09/tuedworkingpaper11_web.pdf

³⁸⁶ In the words of the late anarchist writer Murray Bookchin, “Capitalism can no more be ‘persuaded’ to limit growth than a human being can be ‘persuaded’ to stop breathing.”

baseless. This has led to calls for “system change not climate change” and the need to move beyond capitalism to some form of socialism or ecosocialism. The following equation sums up this thinking:

Capitalism = growth = energy expansion = emissions = climate change.

But the various strands of left thinking have each in their own way struggled to come up with either a set of policies or a plausible political strategy that can show how the world can radically reduce its dependency on fossil-based energy while ensuring a decent life for everyone. Many factors have contributed to this failure, and much effort has been expended in trying to address it. These efforts have produced many appealing slogans and sturdy demands, but the results in terms of changing policy have been generally disappointing

It might be useful, therefore, to think of the *public pathway* approach as an evolving *theory of transition* in the sense that it attempts to show ways to “get us from here to there” through the extension of public ownership of energy with an emphasis on the crucial role of the power sector. The *public pathway* is therefore less a vision of a future society, and more a proposed set of programmatic commitments that can improve the chances of a new political economy emerging in the coming decades, one that is consistent with the hopes and aspirations of many of today’s social movements.

The evidence of history—as well as common sense—have made it clear that the current energy expansion is inseparable from capitalist expansion, and this is what is driving the climate crisis and the breakdown of the world’s ecosystems. We also know that any serious attempt to decarbonize the economy (such as transport, industry, heating and cooling, food and agriculture, etc.) will require lots more electricity, even if energy conservation and efficiency are dramatically scaled up.³⁸⁷ It therefore follows that *any* viable or effective means of apprehending the energy expansion and mitigating its climate impacts must involve taking control of how energy is generated and used.

This is main tenet of central to the *public pathway* idea. Control of energy is critical given both technical realities and from the perspective of political strategy. The struggle for energy can provide a clear focus to movements that strive for radical systemic change.

However, it is necessary to emphasize what was said earlier: taking control of energy will not solve all problems or address all concerns. The capacity of *any* policy framework or set of reforms to significantly alter the direction and growing size of the capitalist global political economy (in terms of its use of resources) remains unknown. A *public pathway* approach to energy transition will not bring capitalism to an end, but it must be functionally anti-capitalist in that it helps to impede the dynamics of capitalist expansion while promoting public goods within a framework of internationalism and cooperation.

³⁸⁷According to estimates by the European Commission, the share of electricity in final energy consumption will increase from 22 percent (2015) to 29 percent (2030) and up to 53 percent (2050).
<https://www.eea.europa.eu/highlights/eu-achieves-20-20-20>

Looking more closely at the different strains of left thought mentioned above, the need for a *theory of transition* is easily detectable, as is the need to make energy more politically visible. What follows is a summary of the different perspectives. The intention is not to caricature the contributions of different movements and ideas, but to draw attention to energy realities and the complexities of the transition.

o Ecosocialism

Socialists in the trade union movement increasingly self-identify as ecosocialists because the word expresses both an awareness of the need to address the ecological crisis and the potential of socialist policies to make a major contribution to the effort to change society in ways that can be more compatible with a more sustainable relationship with nature.

The founders of ecosocialist thought have provided us with a compelling analysis of capitalism's seemingly inseparable ties to ecological destruction and climate instability. Long before climate change became defined as a civilizational emergency, self-defined eco-socialists were drawing attention to the ecological impact of capitalism, and were critical of the "productivist" leanings of socialist parties and governments.

It is notable, however, that the pioneers of ecosocialist thought were explicitly opposed to the idea that the state be central to the transition to a post-capitalist world. If anything, the state should get out of the way! This aversion to the state is reflected in the ecosocialist *Belem Statement* of 2008, but it goes back much further.³⁸⁸

Michael Löwy explicitly warns against trying to use the state to pursue ecosocialist goals. "Ecosocialists," he argues, "should take their inspiration from Marx's remarks on the Paris Commune: workers cannot take possession of the capitalist state apparatus and put it to work at their service. They have to 'break it' and replace it by a radically different, democratic and non-statist form of political power."³⁸⁹ Ecosocialism, another author suggests, should be built around "a network of workplace and consumer-based councils."³⁹⁰ This is utopian thinking at its very best. But how to get from here to there, and how to break the world's dependency on fossil fuels, remains unexplained.

o Degrowth

³⁸⁸ <https://climateandcapitalism.com/2008/12/16/belem-ecosocialist-declaration-a-call-for-signatures/> Andre Gorz called for socialists reject the idea that the future of socialism depended on producing more than capitalism, and to embrace "less but better." Investment, suggested Gorz, should no longer serve the growth of the economy but its contraction.

³⁸⁹ Michael Lowy, *Ecosocialism and Democratic Planning*, - need full citation. Some socialist writers have posited that "the commons" provides the foundation for a future socialist society.

³⁹⁰ For Derek Wall, "While state provision can be humanized and markets tamed by the social, the more fundamental task requires that both the state and the market are rolled back." See: <https://thenextsystem.org/toward-democratic-eco-socialism-as-the-next-world-system>

Along similar lines, the degrowth movement—which has close ties to the early expressions of ecosocialism—has been built around several core ideas, among them being the need to relocalize economic life. Its advocates claim that degrowth and relocalization is not a route to poverty, but rather to a phase of “post-development” that looks for “forms of collective prosperity that do not put the emphasis on a material well-being that destroys the environment and the social bond.”³⁹¹

Degrowth is appealing to many on the left who understand how a culture of materialism and consumption has been cultivated in ways that serve capitalist expansion (which results in rising energy demand, emissions, and pollution). Having seen the damage that states can do (sometimes in the name of socialism) the desire for political and economic relocalization is understandable. Some in the left (including the trade union left) equate degrowth with economic *contraction* which, given current capitalist realities, would lead to mass unemployment and social devastation. Degrowth thinkers reject this interpretation, insisting that degrowth is a banner “that can rally those who have made a radical critique of development and who want to outline the contours of an alternative project for a post-development politics... Its goal is to build a society in which we can live better lives whilst working less and consuming less.”³⁹²

Many of the leading degrowth writers avoid offering a “from here to there” pathway or strategy, and this avoidance is often deliberate. Suggesting a pathway or strategy would, they feel, violate the spirit of local or community-based decision making. Latouche, writing in 2007, states: “The preconditions that might allow us to dream of building a de-growth society have yet to be established, and it is doubtful that such a society would be built within the outdated framework of the nation-state.”³⁹³ In other words, when the nation state disappears, then a degrowth society might flourish.

Degrowth advocates believe that their ideas provide an answer to “productivism” and the societal “obsession with growth,” an obsession that, they believe, spans across the political left and right: “Republics, dictatorships, authoritarian systems, no matter whether their governments were of the right or the left, and no matter whether they were liberal, socialist, populist, social-liberal, social-democratic, centrist, radical or communist. They all assumed that economic growth was the unquestionable cornerstone of their systems.”³⁹⁴

o ***Buen Vivir***

A similar approach to the state and conventional politics is evident in the *Buen Vivir* movement. Roughly translated as “living well,” *Buen Vivir* is a philosophy associated with the indigenous

³⁹¹ Serge Latouche, *Farewell to Growth* (Malden MA: Polity Press 2009)

³⁹² Serge Latouche, *Farewell to Growth* (Malden MA: Polity Press 2009)

³⁹³ Serge Latouche, *Farewell to Growth* (Malden MA: Polity Press 2009), page 96

³⁹⁴

peoples of the Andean countries. *Buen Vivir* was incorporated as a guiding principle of the state in the new constitutions of Ecuador and Bolivia.³⁹⁵ However, the left governments of Ecuador and Bolivia were eventually accused of adhering to *Buen Vivir* in words alone, choosing instead to base economic development on the exploitation of domestic oil, gas, and mineral deposits. In the words of Rafael Puente, “We denounce the abuse of Mother Earth by all the developed countries to the whole world, but we reserve for ourselves the need to mistreat Mother Earth until such time as we have reached a minimum level of development.”³⁹⁶ *Buen Vivir* openly challenged economic development as a normative concept and its adherents condemn the *extractivist* economic policies of so-called Pink Tide administrations in Brazil and elsewhere.^{397/398}

Buen Vivir thinking has had a big influence on different social movements around the world, including those in the Global North. The modern environmental, climate justice, ecosocialist, ecofeminist, food sovereignty, “degrowth” and other movements have all, in one form or another, embraced *Buen Vivir* because it captures core elements of their own world view and aspirations.³⁹⁹

Buen Vivir’s anti-extractivism carries with it a strong bias against state-driven efforts to protect or extend public ownership of energy, on grounds that it will obstruct the emergence of a new and communitarian ways of living.⁴⁰⁰ For Pablo Solon, “state-led plans should give way to a community-driven model: The constitutional recognition of *Buen Vivir* [in Bolivia and Ecuador] ... encourages the belief that advances toward *Buen Vivir* could be made through a national state-based “development” plan when the secret of this vision in fact lies in the strengthening of the community, in boosting its capacity for complementarity with other communities and in the self-management of its territory.”⁴⁰¹

In common with ecosocialist and degrowth thinking, *Buen Vivir* rejects the idea that states should show leadership in terms of addressing and rectifying the ills, ecological as well as social,

³⁹⁵ <http://links.org.au/pablo-solon-vivir-bien-beyond-capitalism-development>

³⁹⁶ <https://www.paginasiete.bo/nacional/la-defensa-de-la-madre-tierra-se-redujo-a-mero-discurso-DFPS12063>.

Cited by Solon, <http://links.org.au/pablo-solon-vivir-bien-beyond-capitalism-development>

³⁹⁷ As Argentinian Marxist Atilio Boron wrote in 2012: “What has emerged in Latin American politics is more than a debate over development, growth or the environment; it is a profound controversy over the course of civilization itself.” <https://climateandcapitalism.com/2015/08/31/buen-vivir-and-dilemmas-of-latin-american-left/>

³⁹⁸ Thea Riofrancos, *From Petro-Nationalism to Post-Extractivism in Ecuador*, 2020, Duke University Press, Introduction. Available at: https://www.dukeupress.edu/Assets/PubMaterials/978-1-4780-0848-4_601.pdf

³⁹⁹ According to Pablo Solon, “The ‘rights of Mother Earth’ are designed to construct new relationships with nature. The concept of ‘the commons’ emphasizes the self-management of human communities. The ‘economy of solidarity,’ the ‘economy for life,’ the ‘economy of transition’ all of them contribute from various perspectives. Each has strengths, limitations, contradictions and points in common. All are ideas under construction. <http://links.org.au/pablo-solon-vivir-bien-beyond-capitalism-development>

⁴⁰⁰ As Riofrancos notes: In response to the social and environmental impacts of extractive projects, [social movements] abandoned their historic calls for expropriation, nationalization, and the collective ownership of the means and products of extraction and embraced anti-extractivism: the militant opposition to all forms of resource extraction. Thea Riofrancos, *From Petro-Nationalism to Post-Extractivism in Ecuador*, 2020, Duke University Press, Introduction. Available at: https://www.dukeupress.edu/Assets/PubMaterials/978-1-4780-0848-4_601.pdf

⁴⁰¹ <http://links.org.au/pablo-solon-vivir-bien-beyond-capitalism-development>

of the current energy-intensive development model. To varying degrees, all three strains of thinking celebrate local economic activity (relocalization) and consider it to be the basis of a truly sustainable future. But these perspectives see no room for the state, because the state will stand in the way of the kind of localized political economy its advocate's desire.

"From Here to There" and Climate Justice

We can also see the absence of a theory of transition in the climate justice discourse. Since COP15 in Copenhagen in 2009, the (mostly North-based) movement has focused on mobilizing people to put pressure on elected leaders to show "more climate ambition." Many of those same government leaders have complied. More ambitious targets have been adopted by most of the world's major economies.

But those targets will, the evidence suggests, not be met.

And as the distance between ambition and action grows, climate movement leaders then work hard to mobilize more activists, demanding that leaders honor the commitment they have made.⁴⁰² And so it goes on. The emphasis on moving people (especially young people) into action is understandable, but the widening gap between ambition and action requires a deeper explanation.

A *public pathway* approach can perhaps help the climate justice and other movements develop a transitional "from here to there" approach by showing the importance of controlling energy by reclaiming energy companies and have them operate under a global public goods mandate.

Making Energy Visible

It is important to note that energy does not feature prominently in either degrowth or ecosocialist thinking. In fact, it is seldom mentioned. This is a major weakness. In fact, it is so major that, once energy realities are made visible, an economy based on relocalization seems impossible to imagine.

Degrowth advocates point to the need to rediscover local economic autonomy in the form of local agriculture, local trade, local money, and—crucially—local renewable energy. According to one account, "every region in the world has a natural potential to develop one or more form of renewable energy."⁴⁰³

⁴⁰² As one US-based activist wrote recently, what's needed is "a bigger, louder [climate] movement. Weaving local fights together into regional, national and international movements that can demand the highest levels of action from the highest levels of government is critical. These wins take local resilience and spread it as wide as possible by forcing governments with the greatest amount of power and resources to deploy it at the scale a climate emergency demands."

<https://popularresistance.org/the-climate-movement-was-built-for-a-world-before-climate-change/>

⁴⁰³ Yves Cochet, Yves (2005), *Petrol Apocalypse*

This is an astonishing claim, unless the renewable energy referred to resembles the water mills and windmills of the pre-industrial period, or perhaps it is renewable energy that comes in the form of the caloric power of horses, cattle and humans. And, of course, the rapid urbanization that has accelerated in recent decades, bringing to birth hundreds of new cities in the South, makes such a vision of sufficient levels of localized energy provision implausible.

According to leading degrowth thinker Murray Bookchin, “With the development of technology that could not have been conceived by the wildest science fiction of Marx's day, the possibility of a post-scarcity society now lies before us...Most of the products needed to meet the population's needs could be produced in local factories financed on a local basis by collective savings. All production for local needs should therefore be carried out at the local level.”⁴⁰⁴ But where will the energy to manufacture and sustain the technologies and local factories come from? Technologies that might underpin a post-scarcity society rely on power that, in most instances, is currently generated by burning fossil fuels generated in large power stations.

The Scale of the Challenge

Previous TUED papers have drawn attention to the technical limits of distributed energy, whether communally or individually generated.⁴⁰⁵ There is a growing body of research that makes it clear that while high levels of renewables-based power generation may solve some problems, it will create others (see discussion below on Bangladesh and Japan). And while energy can and should be used more efficiently, the more efficient use of energy also requires industrial-scale production of technologies (such as storage batteries, insulation materials, glass products) that are also resource intensive.

IRENA's most recent data on the levels of wind and solar deployment needed to stay within 1.5 degrees of warming draws attention to the scale of the renewable energy build out that is required. In order to meet 70% of global electricity demand with wind and solar power by 2050, 14,000 GW of solar PV would need to be installed globally, and installed wind power (onshore and offshore) would need to exceed 8,100 GW.⁴⁰⁶

Compare this to today's total installed generation capacity of just over 7,000 GW, and the scale of what needs to be done becomes clear. This does not include the capacity that needs to be added to supplement renewables which, according to the IPCC, will require a 120% increase in nuclear power (from 440GW to 920GW by 2050) and a massive scale up of carbon capture and storage (CCS) for industrial processes that require intense heat.

It is worth reminding ourselves that about 10% of the world's electricity generation is today provided by wind and solar power, and most of this 10% is generated at “utility scale,” meaning wind farms and large solar arrays owned and operated by private developers that source inputs

⁴⁰⁴ <https://www.marxists.org/archive/bookchin/1969/listen-marxist.htm>

⁴⁰⁵ TUED Working Paper 13, Transition in Trouble: The Rise and Fall of Community Energy in Europe, 2020

⁴⁰⁶ IRENA, World Energy Transitions Outlook, 2021.

<https://www.irena.org/publications/2021/March/World-Energy-Transitions-Outlook>

from technology suppliers based in numerous countries.

States and Multilevel Change

If taken seriously, the basic facts presented throughout this document pose a massive problem for the various strains of radical thought discussed above. All have had some degree of influence on trade union thinking, and they have helped sustain a radical critique of the current political economy and the dynamics of growth that has been enormously beneficial. Nevertheless, it seems difficult to imagine how climate- and energy-related climate targets will be reached absent some form of concerted and coordinated actions by states, at which time fully reclaimed national utilities that are fully equipped technically and staffed with committed workers and management will need to play a central and coordinating role.

There is also the need for planning, and cooperation at all levels of the system. Operating under a new mandate designed to deliver public goods, reclaimed utilities must be committed to the task of expediting a societal shift that can begin to change the capitalist political economy and, perhaps, be part of a cascade of changes that can bring about systemic change. And to have any chance of success, a *public pathway* approach to energy transition based on extending public ownership will need to be accompanied by major changes in global economic management and the use of public finance.

The chances of these changes occurring any time soon appear to be slim. Major shifts in the direction of global economic management occur very rarely, and usually because of major changes in the political and economic landscape. The Great Depression of the 1930s and the impact of World War II led to the creation of the Bretton Woods institutions (BWIs) in the mid-1940s.⁴⁰⁷ The “oil shock” recessions and hyperinflation of the mid-to-late 1970s set the stage for a neoliberal intervention that took control of those institutions. As is well known, prominent neoliberals presided over a policy counter-revolution that favored the global financial interests and large multinational corporations.⁴⁰⁸ But such is the present level of instability—ecological as well as economic and social—that the next big global shift may come sooner than we think.

A *theory of transition* must also be alert to the dilemmas that progressive governments currently face in terms of altering the direction of the political economy at the national, regional

⁴⁰⁷ According to Gallagher and Kozul-Wright, the international order was constructed to support five key global public goods, namely “a stable monetary and exchange rate system; a global lender of last resort to provide liquidity to distressed nations; counter-cyclical and long-term lending; open markets’ including under recession; and a coordinated international economic policy.” See: Gallagher, Kevin, P. and Richard Kozul-Wright. *The Case for a New Bretton Woods*. Available from: VitalSource Bookshelf, Polity, 2021. Introduction

⁴⁰⁸ Asbjørn Wahl, *The Rise and Fall of the Welfare State*, Pluto Press, 2011
<https://www.plutobooks.com/9780745331393/the-rise-and-fall-of-the-welfare-state/>

and global level. During the past two decades, Latin America is where issues around development and *extractivism* have been most fiercely contested, but the contours of similar disputes are already visible in Africa and the Asia-Pacific region.⁴⁰⁹

As is well known, Pink Tide political victories in Latin America beginning in the early 2000s opened a major and often sharply polarized debate on energy policy and, specifically, how countries endowed with energy resources should either use those resources or refrain from using them. Pink Tide governments were accused of pursuing a development pathway based on *extraction* leading to ecological harm, displacement of local populations, and the perpetuation of economic dependency *vis-à-vis* the rich countries of the North and, perhaps more recently, China.⁴¹⁰ Voices in government responded by arguing that South countries—especially the poorest countries—should use whatever energy and mineral resources they have to address poverty and lessen their dependence on energy markets that are dominated by multinationals in the North or state-owned marketized companies based in China, Russia and elsewhere. In a 2012 interview, Ecuador’s President Rafael admonished the “leave it in the ground” politics of that time:

It is madness to say no to natural resources, which is what part of the left is proposing—no to oil, no to mining, no to gas, no to hydroelectric power, no to roads. This is an absurd novelty, but it’s as if it has become a fundamental part of left discourse. With so many restrictions, the left will not be able to offer any viable political projects . . . we cannot lose sight of the fact that the main objective of a country such as Ecuador is to eliminate poverty. And for that we need our natural resources.⁴¹¹

Many in the left have argued that the critique of growth and development offered by advocates of *Buen Vivir*, degrowth thinkers and the pioneers of ecosocialism leave unexplained what, exactly, their alternative might look like and how it might be achieved. According to Atilio Boron, “This mysterious ‘alternative to development’ seems to work the miracle of multiplying electrical energy sources and potable water pipelines, eliminating sewage, building hospitals

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<https://www.livemint.com/industry/energy/coal-mines-struggle-to-expand-as-protests-slow-work-in-india-11649839010564.html>

⁴¹⁰ According to Thea Riofrancos, the Pink Tide period “was also marked by the intensification of an export-oriented, resource-intensive model of accumulation, highly dependent on foreign capital.” See Thea Riofrancos, *From Petro-Nationalism to Post-Extractivism in Ecuador, 2020*, Duke University Press, Introduction. Available at: https://www.dukeupress.edu/Assets/PubMaterials/978-1-4780-0848-4_601.pdf. See also: <https://www.shareable.net/el-buen-vivir-and-the-commons>

⁴¹¹ Correa also took issue with the claim that his administration was pursuing an extractionist model of development, stating: “Just as wealth harms the environment through energy consumption, so does poverty. I can’t tell a poor family living next to a forest not to cut down the trees. If we reduce poverty, we can conserve the environment.” Regarding drilling for oil in the Amazon, Correa added, “What does the most damage to the jungle? The expansion of the agrarian frontier. To avoid this we need to create alternative sources of employment and income. . . . In order to change the situation we need hundreds of millions of dollars. We can obtain those resources from mining. That is to say, the proper exploitation of natural resources can help to conserve nature rather than destroying it.” Interview with Rafael Correa, *Ecuador’s Path*, *New Left Review*, September – October 2012. <https://newleftreview.org/issues/ii77/articles/rafael-correa-ecuador-s-path>

and increasing the number of doctors and nurses to meet the health needs of the population without the economy growing.”⁴¹²

A viable and credible *theory of transition* will therefore need to tackle several key questions pertaining to the use of natural resources and the development of energy-related infrastructure. It must do so in a way that must begin to shape plausible alternatives to energy-intensive and fossil fuel driven “development as usual” that locks in patterns of dependency. Correa had proposed that the North pay Ecuador the equivalent in hard currency of the market value of its hydrocarbons so that the government could pursue an anti-poverty redistributionist agenda. A Global Marshall Plan or a Global Green New Deal might provide the framework to revisit this and similar ideas.

In the case of Ecuador, the development of hydroelectric power provided electricity to rural communities that would not have otherwise existed (see below). GDP levels grew by an annual average of 4.2% in Ecuador and 5.0% in Bolivia during this period due to an increase in state revenues from the boom in raw materials prices and the renegotiation in some cases of the contracts with the transnational corporations. In the case of Bolivia, the government had eight times more revenue, rising from \$673 million in 2005 to \$5.459 billion in 2013. These extra revenues, notes Solon, led to a sharp increase in public investment from 4.2% to 15.6% of GDP in Ecuador and from 14.3% to 19.3% of GDP in Bolivia, which contributed to a marked reduction in the percentage of the population in extreme poverty (to 11% in Ecuador and 16% in Bolivia.) However, according to Solon, the economies of Bolivia and Ecuador became *more* dependent on exports of raw materials as a result of these revenues.⁴¹³ But this does not answer the question of how diversification might have happened if the resources were not exploited in the first place.

Trade Union Debates on Energy Ownership in the Global South

For the past decade, trade union discussions in Latin America have attempted to programmatically integrate different development and *anti-development* perspectives, while expressing concerns regarding the implication of partnering with North-based multinationals in ways that perpetuate resource-related dependencies. As Diego Azzi notes, from 2008 onwards, the Trade Union Confederation of the Americas (ITUC’s regional branch, TUCA), began work on *the Labour Development Platform of the Americas* (known by its Spanish-language acronym PLADA), the first version of which was published in 2014.⁴¹⁴ Reflecting the influence of different parts of the left and the various social movements, PLADA calls for the “defense and preservation of the commons” alongside “energy sovereignty and democratization with a

⁴¹² Atilio Boron ‘Buen vivir’ and the dilemmas of the Latin American left

<https://climateandcapitalism.com/2015/08/31/buen-vivir-and-dilemmas-of-latin-american-left/>

⁴¹³ <http://links.org.au/pablo-solon-vivir-bien-beyond-capitalism-development>

⁴¹⁴ CSA. 2014. PLADA. Plataforma Laboral de Desarrollo de las Americas. Confederacion Sindical de Trabajadores/as de las Americas. Sao Paulo.

sustainable matrix” and “a new production, distribution and consumption paradigm with present and future environmental sustainability.”⁴¹⁵

In its 2019 Declaration of the 3rd Regional Conference on Energy, Environment and Work the Trade Union Confederation of the Americas (TUCA) went further in terms of imagining a role for public ownership in helping to create such a paradigm. It called for the “De-privatization of the sector, given that the logic of private profit is opposed to the logic of satisfying the needs of peoples and nations.” However, it also stated that, “The first demand of the working class is to end energy poverty. That is, ensure that everyone have access to the energy required to maintain basic standards of family life and mobility” and “energy must be defended as a public service.”⁴¹⁶

National-level trade union discussions have also attempted to integrate various critiques of development within a framework of public ownership and energy sovereignty. In an October 2021 statement, Mexico’s power sector union (SME) expressed support for the government’s efforts directed towards “recovering control of the electrical system by the Mexican state, which is in the interests of the Nation and the energy sovereignty of our country.” A “just energy transition,” SME noted, “should also include the development of new sources of clean energy and local distributed generation with the democratic participation of peasant communities and indigenous peoples with full respect for their culture, territory and autonomy.” [link needed]

Both the PLADA program and subsequent declarations have attempted to situate public ownership of energy as a bridge between the anti-extractionist left and those in the left that see the prudent exploitation of resources as a way to raise living standards. PLADA also attempted to develop ways to address concerns associated with a state-driven approach to energy development, by calling for “democratic and transparent mechanisms of popular participation, who define what energy we want to develop, how, for what purposes and for whom, and in doing so question, among other things, the excessive consumption patterns of the elites.”⁴¹⁷

Divisions within the left around extraction and the exploitation of energy resources will, in one form or another, be a constant presence. Of course, voices in the anti-extractionist left might reject a *public pathway* on grounds that it does not explicitly challenge the basic assumptions of modernity and capitalist civilization. On the other hand, the prudent use of fossil-fuels and minerals (lithium, for example) and other sources of energy to address poverty may find itself unable to impede the growth of energy consumption in ways that are compatible with science-based climate targets.

The reality is such that several questions will require careful consideration. These are:

⁴¹⁵ CSA PLADA, pp 43–48

⁴¹⁶ TUED Bulletin 79, October 2019, *Latin American Unions Adopt Radical Energy Agenda: “De-privatize, Democratize, De-commodify”*

<https://mailchi.mp/cornell/just-transition-a-revolutionary-idea-tued-bulletin-1241629?e=3de08e1c79>

⁴¹⁷ TUCA *Declaration of the 3rd Regional Conference on Energy, Environment and Work*. See: TUED Bulletin 79, October 2019, *Latin American Unions Adopt Radical Energy Agenda: “De-privatize, Democratize, De-commodify”*
<https://mailchi.mp/cornell/just-transition-a-revolutionary-idea-tued-bulletin-1241629?e=3de08e1c79>

1. Can a *public pathway* approach afford space to the poorer regions of South to exploit their fossil fuel resources for both domestic use and for export to earn hard currency to address poverty (including energy poverty) and promote needs-based development?
2. Can a reshaped multilateral system accommodate an energy transition that allows for the continued exploitation of fossil fuels in one part of the world while driving a scaling down of fossil fuel production and use in economies that are less dependent on revenues generated by the extraction of coal, oil and gas (such as the United States, Canada, and Norway)?
3. If countries of the South choose to exploit their energy resources, how can a *public pathway* approach reduce the negative social and ecological impacts that have become associated with the traditional methods of extraction (such as mining, drilling, and blasting)?
4. With regard to governance and decision making as these pertain to public energy entities, we have seen how left governments have clashed with indigenous and radical environmental movements, especially in Latin America.⁴¹⁸ Can such conflicts—which may be based on seemingly intractable disagreements between local versus national interests and rights—be reconciled either through consultation or through a more equitable sharing of the benefits of resource exploitation? Or are such conflicts intrinsically unresolvable?
5. How viable are development models that explicitly reject extraction as an option? What space might these options occupy within a *public pathway* framework?

Energy Expansion and Reclaimed Utilities

It was stated earlier that a *Public Pathway* approach to addressing the South-led energy expansion will require finding ways to make steady progress towards accomplishing a set of difficult tasks. Four tasks are briefly discussed below. These are:

- 1 Slow the pace of carbon “lock in.” Engage in “managed decline.”
- 2 Progressively change the energy mix by decarbonizing energy supply
- 3 Restore energy planning, control supply chains, develop promising technologies
- 4 Drive energy efficiency and conservation on a non-monetary, public goods, basis.
Build the institutional framework for public-public partnerships

⁴¹⁸ Thea N. Riofrancos, *Scaling Democracy: Participation and Resource Extraction in Latin America*, *Perspectives on Politics*, Volume 15, Issue 3, September 2017, pp. 678 – 696 Available at <https://www.cambridge.org/core/journals/perspectives-on-politics/article/abs/scaling-democracy-participation-and-resource-extraction-in-latin-america/2D521B5571B0282CCC130ADC76208F8D>

Any attempt to complete these tasks will be contingent on major changes, the aim of which would be to reconstitute public energy utilities as *partners* in the energy transition and not, as is currently the case, the *target* of policies designed to disrupt and undermine them. For reclaimed utilities to play a role as partners in the transition they will need to be demarketized.

“Demarketize” in this context refers to changing the rules by which energy companies operate. They will no longer need to sell electricity into wholesale markets (where they exist) which have, in any case, come to epitomize the lack of planning. Long-term energy contracts will increasingly resemble service contracts that will need to be developed and approved by new regulatory bodies committed to a public goods mandate. User-prices will be regulated according to social and ecological priorities. Where they exist, both the electricity wholesale and retail markets will be formally phased out, thus ending the pretense of “competitive markets.” “Marketization” has led to “restructuring democratic accountability and participation and extending business involvement in public policy making.” This must be reversed. In other words, demarketization will be a precursor to public accountability and democratic control.⁴¹⁹

Demarketization opens the door to “decommodification.” This amounts to a shift away from the selling of electrical power according to a “volumetric” model, which, from either a private company or a marketized public company correlates with “the more we sell, the larger the revenues.” In the fight against climate change and other ecological problems, less should be more, sufficiency should be the goal, and transition planning should be central.⁴²⁰

Decommodification does not mean electricity will not be *priced* according to the amounts consumed. Prices can be regulated in order to address energy poverty, or to ensure that large industrial and commercial consumers have an incentive to reduce their levels of use. In practical terms, this will mark the end of power purchase agreements (PPAs) and replacing them either with direct public ownership of the means of producing the technologies or with a much simpler procurement model where generation capacity and auxiliary technologies are purchased, owned and operated by reclaimed public companies.

1 Slow the Pace of Carbon “Lock-in.” Introduce “Managed Decline.”

It was stated earlier that a *Public Pathway* approach to addressing the South-led energy expansion will require finding ways to make steady progress towards accomplishing a set of difficult tasks.

Among the most important climate-related tasks that government policy must pursue is the prevention of carbon “lock-in.” Carbon lock-in occurs when, for example, a new coal-fired power

⁴¹⁹ Dexter Whitfield, *Equitable Recovery Strategies: Why public ownership and democratic control must be at the heart of Green and Integrated Public Healthcare Deals* (European Services Strategy Unit, July 2020), p.48

⁴²⁰ “Decarbonisation of energy must run parallel with the decommodification of public services and the de-commercialisation of nature and biodiversity. They must be aligned with democratisation and participation and political, economic, social and environmental equality and justice.” *Equitable Recovery Strategies* | Dexter Whitfield p5

station come online and thus locks in CO2 emissions for several decades into the future, thus making it more difficult to reach climate targets. In 2022 the IEA noted, the challenge facing the South “is to find development models that meet the aspirations of their citizens while avoiding the high-carbon choices that other economies have pursued in the past.”⁴²¹

The problem, however, is that, although uneven, almost all countries of the South are already on a high-carbon development pathway, so any talk of “avoiding high carbon choices” is avoiding reality. As we have seen, modern renewable energy is growing quite quickly in China, India, Vietnam and a few other countries. But modern renewables are growing far less quickly in countries like Bangladesh, Indonesia, the Philippines and many other developing countries. In the Middle East and North Africa (MENA) region modern renewables are also growing very slowly. Roughly 95% of annual

A good amount of emissions currently being generated in the South are the result of making products that are consumed in the rich countries, although the domestic markets for consumer goods in China, India and elsewhere are rapidly expanding.⁴²² From this it follows that a class-based approach would attribute responsibility to *both* the producers of the emissions *and* those that profit from the consumption of the products that have been produced, such as the large retailers in food, clothing and textiles, motor vehicles, electronics, as well as producers of steel, cement, plastics, etc. But attributing responsibility appropriately does not provide a solution to the problem of energy expansion or carbon lock in.⁴²³ This will require finding the means to ensure that energy supply be progressively decarbonized and energy demand be controlled and eventually reduced.

But what about existing generation capacity that is already “locked in”? Some studies suggest that reaching the Paris targets will be impossible if a substantial share of the recently added coal- and gas-fired capacity is not retired long before the end of its design life.⁴²⁴ Global coal-fired generation *doubled* during the period 1990 to 2018, with more than 1,000 GW of installed capacity added, mostly in Asian countries.⁴²⁵ The task, these studies suggest, is to close power stations even though they are relatively new and would otherwise generate power for

⁴²¹ IEA Special Report, Financing Clean Energy Transitions in Emerging and Developing Economies (EMDEs) | [Special Report](#)

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https://www.pbl.nl/sites/default/files/downloads/pbl-2020-trends-in-global-co2-and-total-greenhouse-gas-emissions-2019-report_4068.pdf

⁴²³ Countries from the North accept responsibility for their contribution to climate change by way of cumulative emissions but they have not acted on it. Similarly, the major economies of the South recognize the need to decarbonize development and have adopted “green growth” despite its record of failure.

⁴²⁴ Tong, D., Zhang, Q., Zheng, Y. *et al.* Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target. *Nature* **572**, 373–377 (2019).

<https://doi.org/10.1038/s41586-019-1364-3><https://doi.org/10.1038/s41586-019-1364-3>. See also:

<https://iopscience.iop.org/article/10.1088/1748-9326/ac13f1/pdf>

⁴²⁵ <https://www.worldcoal.org/installed-coal-generation-capacity-countryregion-1>

decades to come. This “early closure” proposal has been called “managed decline”(MD) or “strategic decommissioning.”⁴²⁶

How a *public pathway* approach might deal with this enormous problem is far from clear. It is possible, in theory, to separate the economic and financial challenges from the technical issues that come into play when MD is considered. On the financial and economic side, governments and companies have committed high levels of upfront investment in what are “fixed costs.” These are costs that either a SOE or private entity will incur regardless of how much revenue is accrued through the sale of the electricity.⁴²⁷ Similarly, “sunk costs” refer to costs that cannot be recovered regardless of what happens. In other words, if a government orders a relatively new coal- or gas-fired power station to close, then costs will be incurred.

Existing SOEs can calculate the cost of closure for accounting purposes, but they cannot be expected to absorb these costs. MD is a global public good that will contribute to the safety and welfare of everyone, which means that MD is a global responsibility. This draws attention to the need for a global agreement or protocols developed to expedite MD in ways that are equitable. Debts incurred by South governments to build new capacity, including debts to the MDBs, DFIs or to China, will need to be written off. As previous TUED papers have documented, countries of the North still rely heavily on coal and gas to generate electricity. For example 60% of the US’ electricity is generated by coal and gas, and only 10% from wind and solar.⁴²⁸ Therefore MD is a global challenge and must be treated as such.

A *public pathway* approach to addressing carbon lock in will confront many obstacles. But it provides a viable alternative to the ill-conceived idea of pricing carbon. As a market mechanism, the introduction of a carbon price was intended to “price the externality” (CO₂). But the “polluter pays” principle does not prevent the pollution; it just passes the cost of pollution on to end-users. It is the failure of this policy over the past three decades that has—if climate targets are to be met—has perhaps made MD unavoidable if climate targets are going to be reached. In theory, MD can be done equitably. However, a global public goods approach to climate protection is essential.

Note to Editor: to be added Guterrez on china commitment:
<https://www.un.org/sg/en/content/sg/statement/2021-09-21/statement-the-secretary-general-the-announcements-the-united-states-and-china-climate-action>

A Global Agreement on Managed Decline?

⁴²⁶ <https://www.iisd.org/publications/report/india-state-owned-energy-enterprises>. See also: <https://iopscience.iop.org/article/10.1088/1748-9326/ac13f1/pdf>, and Hadley, S., Mustapha, S., Colenbrander, S., Miller, M. and Quevedo, A. (2022) Country platforms for climate action: something borrowed, something new? ODI Emerging analysis. London: ODI (www.odi.org/en/publications/country-platforms-for-climate-action-something-borrowed-something-new/)

⁴²⁷ https://energyeducation.ca/encyclopedia/Fixed_cost

⁴²⁸ <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

A global MD agreement could be built around a like-for-like decommissioning of fossil-generated power in both the North as well as the South, perhaps measured in nameplate capacity. When viewed through a global public goods lens, the rich countries will also benefit from MD because the climate benefits are shared by all. Negotiating a global agreement to implement MD may seem a herculean task given how long it took to arrive at the Paris Agreement, but a planetary emergency compels us to consider a range of extremely unlikely scenarios.

It is worth noting that, in the OECD countries, many coal-fired (and nuclear) power stations are reaching the end of their design life and are being decommissioned.⁴²⁹ For comparison, the average age of a coal plant in the U.S. is 39 years; for China it is just 14 years.⁴³⁰

Therefore the financial burden of MD would therefore fall heavily on the shoulders of countries (such as China and India) whose per capita emissions are considerably lower than the per-capita emissions levels of the rich countries. This is because many of the soon-to-be-retired OECD-based power stations were built decades ago and have, in a sense, been “fully paid for.” It is equally true to say that these power stations have already done irreversible damage and a MD agreement should mandate that OECD countries finance MD in the South, and also help—through grant-based finance—to generate new low carbon capacity to replace the coal- and gas-fired capacity that is taken offline.

Replace Fossil Fuels...With?

However, the technical challenges of MD are probably more daunting than any financial considerations. This is because in many countries of the South energy demand is growing rapidly. Therefore, MD will involve retiring capacity that is not only relatively new, but—on the basis of current trends—will present a situation where low carbon capacity will need to be installed far more quickly than it is at present in order to both meet rising demand and to offset the retirement of fossil-based power.

Another major challenge concerns both the availability and feasibility of low carbon energy. Advocates of MD often assume that modern renewables can be rapidly scaled up as fossil-based power can be equally rapidly ramped down.⁴³¹ But some countries and regions are not equally

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<https://www.iea.org/data-and-statistics/charts/average-age-of-existing-coal-power-plants-in-selected-regions-in-2020>

⁴³⁰ EIA, “Most coal plants in the United States were built before 1990,” April 17, 2017, <https://www.eia.gov/todayinenergy/detail.php?id=30812> Carbon Brief, “Analysis: Will China build hundreds of new coal plants in the 2020s?” 24 March 2020, <https://www.carbonbrief.org/analysis-will-china-build-hundreds-of-new-coal-plants-in-the-2020s>

⁴³¹ According to one report, “Renewable power generation is growing exponentially...if wind and solar sustained their current global growth rates, they would exceed current coal and gas power generation in 2029.” And, while

endowed with the kind of space or available land needed for the mass deployment of wind and solar panel. For example, according to the Institute for Energy Economics & Financial Analysis (IEEFA), Bangla Desh (population 168 million), “finding space for utility-scale solar PV power plants in such a densely populated country is a major issue.”⁴³² In a 2016 study, IEEFA said that the source of the problem was government policy that prohibits the use of agricultural land for such developments, noting that “countries like Japan, Germany and Taiwan are not finding such [space-related] constraint.”⁴³³

But more recent studies suggest that space could be a problem, at least in some countries. A 2021 study of Japan’s wind potential concluded that, unlike Europe and the US where, “The instability of energy production from wind and solar renewable resources can be mitigated through cross-region sharing on large scales,” Japan does not have that option and “must primarily rely on its local resources.” Nevertheless, Japan’s current electricity demand, said the report, “could be satisfied by wind power around 80% of the time”—although nearly all of the wind installations would need to be offshore.⁴³⁴ In 2021, wind power contributed just 0.6% to Japan’s energy mix in 2021, and the solar about 5%.⁴³⁵

Either way, a public pathway approach to avoiding carbon lock in must be aware of a range of challenges. As a movement, we cannot afford to be bystanders in what will probably be an intense public debate on how best to move away from fossil fuels, what technologies will need to be developed, and how to assess competing claims with regard to their respective capacities.

2. Progressively change the energy mix by decarbonizing energy supply

Reclaimed, demarketized and restored public utilities have a crucial role in decarbonizing energy supply. As partners in policy, and not the target of neoliberals and their ideological fixations about the private sector, and liberated from having to sell electrons as a means to remain financially viable, public utilities can be given the freedom to make decisions based on a scientific and facts-based assessment of the various options.

However, the effort to reclaim utilities so that they can play a new role will need to take into consideration the status of the power utilities in different regions of the South. Earlier we noted how national power utilities in the energy-poor regions of the South face financial stress, and many have been subjected to efforts to marketize their operations and to reduce their role, particularly in power generation, by increasing space for IPPs.⁴³⁶ In some countries (Chile, the

this pace of renewable energy expansion will require policy support, it continues existing trends.” See Oil Change International, 2016 <https://priceofoil.org/2016/09/22/the-skys-limit-report/>

⁴³² IEEFA, Bangladesh Energy Transition, 2016

⁴³³ IEEFA, Bangladesh Energy Transition, 2016

⁴³⁴ See: Delage, R.; Matsuoka, T.; Nakata, T. Spatial–Temporal Estimation and Analysis of Japan Onshore and Offshore Wind Energy Potential. *Energies* 2021, 14, 2168. <https://doi.org/10.3390/en14082168>

⁴³⁵ <https://www.worldometers.info/electricity/japan-electricity/>

⁴³⁶ Many CEOs are political appointees who have been put in their positions to accelerate internal reform and systems of “New Public Management,” which seeks to bring private-sector management systems into public companies, often with disastrous results. See: Bertelli, T., V. Mele and A. Whitford. 2020. “When New Public

Philippines, and Argentina) power systems were fully privatized; in Mexico, South Africa, India, Vietnam, Indonesia and dozens of other countries, liberalization created space for IPPs.

However, the “standard model” of wall-to-wall privatization proposed by the World Bank and IMF’s has met resistance—and the resistance appears to be rising. In the fast-growing economies of the South, the combined effect of marketization of the SOEs, coupled with the protective approach of home-country governments that regard energy as a strategic assets, has turned key SOEs into successful profit-making multinationals. SOEs also provide revenue to the government from these high-value resources, in addition to taxes and royalties, which reinforces their status as state-protected companies.⁴³⁷ Beyond fossil fuels, marketized SOEs are also very active in global renewable energy and nuclear energy markets where they operate as for-profit entities.⁴³⁸ **[Chile/China solar]**

<https://chinadialogue.net/en/business/9419-china-s-impressive-stake-in-latin-america-s-renewables/>

From this we can conclude that the neoliberal reforms of SOEs, while they did not lead to full privatization, led to a degree of marketization that made “business as usual” a lot more lucrative. It allowed some of them to extend their global reach, and consolidated their status as strategic assets by generating revenues for the host country governments.⁴³⁹ Neoliberals can claim success in that the policies adopted have created stronger “market actors” in several countries. However, from a climate perspective, these policies have simply “fed the beast” and reinforced carbon lock in.⁴⁴⁰

In simpler terms, if the aim of the *public pathway* approach is to disrupt business as usual, its advocates will need to confront the fact that the *status quo* for some marketized SOEs is very

Management Fails: Infrastructure Partnerships and Political Constraints in Developing and Transitional Economies”. *Governance*, 33(3), 477-493.

⁴³⁷ Wehrl, F. and J. Pohl (2016), "Investment Policies Related to National Security: A Survey of Country Practices", OECD Working Papers on International Investment, No. 2016/02, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5jlwrrf038nx-e>

⁴³⁸ For example, the main Korean energy utility, KEPCO operates internationally and is partnering with private renewable energy companies. See:

<https://home.kepco.co.kr/kepco/EN/B/htmlView/ENBJHP00203.do?menuCd=EN02080103> “The Korean energy SOE KEPCO “is actively involved in global clean energy markets, such as Japan and USA, the largest energy market in the world, by initiating commercial operation of solar power plant in Chitose, Japan (28 MW, July 2017), acquiring shares of a solar power plant in Colorado, USA (30 MW, August 2016), winning a solar power plant project in Guam, USA (60 MW, June 2017) and acquiring a solar power plant in California, USA (235 MW, March 2018).”

⁴³⁹ In the case of India, “As of September 2022, nine out of the 11 listed *Maharatnas*—state-owned enterprises (SOEs) with particularly high levels of net worth and annual turnover—operate in the energy sector (Ministry of Finance, 2022; Press Information Bureau, 2019). They are profitable businesses providing regular dividends to the government, employ millions of people, offer energy security, and act as a vehicle of social development in communities where they operate. They are politically and administratively linked to key ministries and retain high investor confidence.” <https://www.iisd.org/publications/report/india-state-owned-energy-enterprises>

⁴⁴⁰ <https://www.iisd.org/publications/report/india-state-owned-energy-enterprises>

profitable both for the companies themselves and the governments with whom they are aligned.

The South's Fossil Fuel Dependency

A related issue—and a further obstacle to decarbonization efforts—is the level of dependency of several countries on the revenues from the export of coal, oil and gas. Fossil fuel exports currently contribute around 40% Russia's budget revenue, and Russia is expected to earn nearly \$321 billion from energy exports in 2022, an increase of more than a third from 2021.⁴⁴¹ Several MENA countries are in a similar situation. Trinidad and Tobago's energy sector accounted for an estimated 35.7% of GDP and 78.4% of exports in 2019, and contributed 23.4% to Government revenue.⁴⁴² Oil comprises 95% of Venezuela's exports and 25% of its GDP.

Furthermore, the majority of the coal trade occurs in the Asia Pacific region, where both the largest importers and exporters are concentrated. Indonesia provided 41% of globally traded thermal coal in 2019. Australia ranked second with 19%. Globally, other important market participants include Russia (17%), South Africa (7%), Colombia (6%) and the United States (3.1%) The fastest-growing coal exporters are all in the South, namely Kazakhstan, Vietnam and the Philippines.⁴⁴³

Embedded in these data, however, is an unavoidable reality: the South's dependency on both fossil-based energy is growing, as is its dependency on the revenues generated by selling and trading in fossil fuels. Until energy alternatives are in place, the energy expansion will mainly be served by a commensurate expansion of fossil fuels.⁴⁴⁴

At this point it is difficult to see how the production-consumption dynamics and the dependencies that are perpetuated by the current political economy of energy can be intercepted, absent the emergence of powerful political movement whose actions can lead to a massive shift in global policy towards a global public goods approach. In the meantime, advocates of a *public pathway* approach must recognize current realities while suggesting ways that those realities can be changed.

⁴⁴¹<https://www.bloomberg.com/news/articles/2022-04-01/putin-may-collect-321-billion-windfall-if-oil-gas-keep-flowing>

⁴⁴² <https://ngl.co.tt/about/tts-energy-sector>

⁴⁴³ <https://www.iea.org/reports/coal-2020/trade>

⁴⁴⁴ Many environmental groups have talked themselves into believing that coal, oil and gas suppliers are “carbon criminals” and the main political task is to fight for policies that can make their operations uneconomical so that Another approach has been to inflict reputational damage on the large fossil fuel companies. None of this has been particularly successful and has led to “we are winning” claims that are exaggerated and misleading. For example, in 2019 divestment NGOs claimed “assets committed to divestment have leapt to more than \$11 trillion,” thus giving the impression that investors were responding the political pressure to stop investing in fossil fuels. The truth is that funds worth \$11 trillion had taken a decision to divest, but \$11 trillion is not the amount divested. See: https://350.org/press-release/global-fossil-fuel-divestment-11t/?_ga=2.162246462.344103079.1664774019-1957430272.1664774019

The starting point of the *public pathway* approach to privatized energy companies is to reclaim those companies to public ownership and to ensure that they are required to operate under a new mandate (TUED refers to this as a dual change, an *ownership shift* and a *mandate shift*.) For energy companies that are still classed as SOEs (either totally or majority owned by states) then they must be *demarketized*.

In the context of a Global Green New Deal and a new multilateralism, governments can mandate that public utilities to both grow and extend their reach into critical technology supply chains, R&D functions, operations and maintenance, etc. that are essential to the decarbonization effort. This will allow for reclaimed utilities to be partners in the implementation of policy and not, as is currently the case, the *target* of policies designed to disrupt and undermine them. At the end of the day, the managers and workers of SOEs are not the main beneficiaries of the current commodified system. A future for SOEs based on a public goods approach would not only be more secure, but it will also help the world become a safer place. A *public pathway* can help reconstitute the ethic of public service in the SOEs both at the domestic and international level.

3. Restore energy planning, control supply chains, develop promising technologies

Perhaps the most important dimension of the *public pathway* approach is that it captures what most unions routinely accept: the need to plan the energy transition.

Previous TUED papers have documented how the attempt to reconcile liberalized energy markets with climate targets has created a policy quagmire particularly in Europe, and the US. As noted above, decarbonization presents many technical challenges. Modern renewable energy – wind and solar – are variable sources of power. At the moment, they require back-up in the form of coal and gas-fired generation and nuclear in order to provide electricity during the night-time and during periods when the sun does not shine and the wind does not blow. Variability poses a series of problems that currently are today not fully resolvable but might be resolvable in future. Energy planning is therefore essential because it provides the means to deal with the purely technical challenges that confront the energy transition, in a manner that is separate from the imperatives of private profit.

With the right governance systems in place, public companies can ensure that the decision-making processes remain open, transparent, and mindful of social as well as ecological needs. And when arrangements with private companies are deemed necessary (as will likely be the case in the short-to-medium term), a public system will make sure those arrangements are based on the best available science, accompanied by legally binding conditions regarding worker protections, operational transparency, and job creation.

Addressing Market Concentration

Effective planning will, however, be contingent on addressing market concentration in key supply chains. Today's wind and solar markets are dominated by a few countries and a relatively

small number of large energy companies. The same is true of the nuclear industry. China today accounts for 73% of global solar pv production and completely dominates the PV supply markets. In 2019, Europe, the US and Canada together had a market share that was under 7%.^{445 446} In 2018, China was the world leader in annual PV installations, with India, the US, the EU and Japan being the next largest markets.⁴⁴⁷

In the case of wind energy, a similar picture emerges. The market is highly concentrated. Just six turbine suppliers control nearly three-quarters of the global market.⁴⁴⁸ Again, China's presence is growing. In 2005, no Chinese wind companies were in the global top 10. A decade later, in 2015, five of the top ten wind turbine manufacturers were based in China.⁴⁴⁹

Nuclear energy is also a concentrated market with relatively few technology producers. Just twelve companies dominate the industry. These include three China-based companies, China National Nuclear Corporation (CNNC); China General Nuclear Power Group; and the China State Power Investment Corporation. Other large companies include the EDF-Framatome and Areva (France), US companies General Electric and Westinghouse; Japanese companies (Hitachi, Mitsubishi Heavy Industries, and Toshiba); Korea's Electric Power Corporation, and the Nuclear Power Corporation of India, and the Russia's State Atomic Energy Corporation (Rosatom) which is one of the world's largest nuclear companies.⁴⁵⁰

This level of market concentration means that there is currently not enough industrial capacity to scale-up the deployment of these technologies in ways that are consistent with climate targets.⁴⁵¹ As noted above, the levels of wind and solar deployment needed to stay within 1.5

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<https://www.reuters.com/article/us-solar-utilities-analysis/handful-of-players-seen-ruling-the-solar-roost-idUSTRE5603SD20090701>; Fraunhofer Institute for Solar Energy Systems, ISE. (17 June 2020) *Photovoltaics Report*, 5.

Fraunhofer Institute for Solar Energy Systems, ISE with support of PSE Projects GmbH

⁴⁴⁶ <https://iea-pvps.org/wp-content/uploads/2020/02/5319-iea-pvps-report-2019-08-lr.pdf> p 69

⁴⁴⁷ These 5 countries (with the EU considered a country) account for 74% of the world's total rate of PV installations. See: Kihlström, Victoria; Elbe, Jörgen. 2021. "Constructing Markets for Solar Energy—A Review of Literature about Market Barriers and Government Responses" *Sustainability* 13, no. 6: 3273.

<https://doi.org/10.3390/su13063273>

⁴⁴⁸ <https://gwec.net/global-wind-report-2021/>

⁴⁴⁹ However, four of the top 10 wind companies are in the EU. Of the 60.7 GW of wind turbines commissioned globally in 2019, four manufacturers — Denmark's Vestas, Spain's Siemens Gamesa, China's Goldwind, and General Electric of the U.S. — accounted for more than half (55%) of the deployed machines. Today just 10 producers account for 80% of the total global blade supply. <https://gwec.net/global-wind-report-2021/>, see also <https://iea-pvps.org/wp-content/uploads/2020/02/5319-iea-pvps-report-2019-08-lr.pdf>

⁴⁵⁰ As of late 2019, Rosatom was constructing 25 reactor units in nine countries with agreements reached for the construction of a total of 36 power units in 12 countries. See:

<https://www.world-nuclear-news.org/Articles/Rosatom-marks-75th-anniversary-of-Russian-nuclear->

⁴⁵¹ Poulsen, T. and Lema, R. (June 2017) 'Is the supply chain ready for the green transformation? The case of offshore wind logistics', *Renewable and Sustainable Energy Reviews*, 73, 758–77. Available at:

<https://doi.org/10.1016/j.rser.2017.01.181>. According to the IEA, "Much more [solar PV] would be needed to decarbonize the energy sector... While some countries take PV seriously, most haven't yet considered the full potential of an energy source..."

<https://ieps.org/wp-content/uploads/2020/02/5319-iea-pvps-report-2019-08-lr.pdf>

degrees are enormous. In order to meet 70% of global electricity demand with wind and solar power by 2050, 14,000 GW of solar PV would need to be installed globally, and installed wind power (onshore and offshore) would need to exceed 8,100 GW.⁴⁵² This does not include the capacity that needs to be added to supplement renewables which, according to the IPCC, will require a 120% increase in nuclear power (from 440GW to 920GW by 2050) and a massive scale up of carbon capture and storage (CCS).

Operating under a new mandate anchored in decommodification and demarketization, reclaimed public companies will have the capacity to being to meaningfully address the twin challenges posed by both the market concentration and the need to scale-up capacity. This is because, paradoxically, the main obstacle that lies in the path of for-profit companies is the need to make money by selling electricity. This applies to wind, solar and nuclear companies. Profits can be secured by way of PPAs, but industry expansion is nevertheless constrained by the commodification of electricity and the development of liberalized markets that are the hallmarks of neoliberal policy. If the current for-profit approach remains intact, then climate targets will not be reached.

Just as commodification was driven by neoliberal policy, *decommodification* will be the result of a series of informed, pro-public policy interventions. Operating within this framework, reclaimed public companies in different countries and regions can collaborate in a broad effort to diversify and scale up production of the technologies that are essential to the transition.

The wind, solar and nuclear estimates referenced above suggest that no region or country need be excluded in terms of creating industrial capacity and jobs. Put simply, there is more than enough work to go around. And whatever advantages some countries and companies may have currently in terms of their respective capacities to produce, sell products, and control markets, these advantages could ultimately be meaningless if the climate emergency and other social and ecological crises are not effectively addressed.

Given the importance of the need to scale up deployment of low carbon generation capacity, governments would be fully justified in taking decisive action in order to plan and develop the levels of production that are required. This could be achieved by way of governments taking the major technology providers into full public ownership via nationalization if, that is, the technology supplier serves to local market and is located close to that market.

4. Drive energy efficiency and conservation on a non-monetary, public goods, basis. Build the institutional framework for public-public partnerships

The fourth task to consider is role reclaimed public utilities might play in accelerating energy efficiency and promoting energy conservation. The IPCC, the IEA and others have estimated that energy efficiency and conservation (for convenience, “efficiency”) can potentially contribute up

⁴⁵² IRENA, World Energy Transitions Outlook, 2021.
<https://www.irena.org/publications/2021/March/World-Energy-Transitions-Outlook>

to 40% of the reductions in energy related emissions required by 2050.⁴⁵³ The “Low Energy Demand scenario” (LED scenario) developed for the IPCC suggests that, if already existing energy-saving technologies and methods were fully deployed or operationalized, the reductions could be as high as 53%.⁴⁵⁴

But it is today plainly evident that these potential emissions reductions will not be fulfilled on the basis of the current neoliberal approach.⁴⁵⁵ Efficiencies are not being pursued because there are few opportunities for private interests to make money. In the industrial sector, companies—concerned about profit margins and market shares—normally only invest in efficiency when it is either “cost effective” to do so (in a narrow monetary sense) or when it is to comply with government regulations.⁴⁵⁶ Neoliberal policymakers assumed that pricing CO2 would accelerate efficiency improvements. A price on carbon was expected to provide an incentive to companies to invest in efficiency to reduce what they might have to pay for emissions permits. It was also hoped that a price on carbon price would create a market for efficiency-enhancing technologies. But none of this has happened to any significant degree, and it is not going to. The result is the perpetuation of highly inefficient energy use and ever-higher emissions.⁴⁵⁷

Realistic Expectations

⁴⁵³ IEA/IRENA Perspectives for the Energy Transition: Investment Needs for a Low Carbon Energy System, <https://www.irena.org/publications/2017/Mar/Perspectives-for-the-energy-transition-Investment-needs-for-a-low-carbon-energy-system>. See also: Akashi et al. (2014)

<https://link.springer.com/article/10.1007%2Fs10584-013-0942-x>; Arnulf Grubler, et. al., A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies, *Nature Energy*, Vol 518 3, June 2018, 515–527, www.nature.com/natureenergy

⁴⁵⁴ Arnulf Grubler, et. al., A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies, *Nature Energy*, Vol 518 3, June 2018, 515–527, www.nature.com/natureenergy

⁴⁵⁵ In 2020, the *Global Commission for Urgent Action on Energy Efficiency* concluded that the current approach to efficiency is failing. Its report noted: “A range of policies exists to drive demand for energy efficient products and services, yet market uptake is still far from where it needs to be.” IEA, “Recommendations of the Global Commission for Urgent Action on Energy Efficiency,” June 2020, <https://www.iea.org/reports/recommendations-of-the-global-commission-for-urgent-action-on-energy-efficiency>, p. 12. See also:

According to the IEA, “Future projections reveal that under existing policies, the vast majority of economically viable energy efficiency investments will remain unrealized.” IEA, 2014. *Capturing the Multiple Benefits of Energy Efficiency*, International Energy Agency, Paris. The IEA notes, “Future projections reveal that under existing policies, the vast majority of economically viable energy efficiency investments will remain unrealized.”

⁴⁵⁶ CEPS Policy Insight 2017/44 *Transforming Energy-Intensive Industries: Reflections on innovation, investment and finance challenges*

⁴⁵⁷ In fact, the efficiency trends of the past several decades suggest that the pace of efficiency improvements has slowed significantly. For example, the global carbon intensity annual improvement levels averaged 1.28% between 1960 and 2000. But from year 2000 to 2014, the level of improvement slowed to 0%. CO2 efficiency trends in the high-income OECD countries also slowed, from 1.91% annually for the period 1970-2000, to 1.61% for the period 2000-2014. See: Parrique T., Barth J., Briens F., C. Kerschner, Kraus-Polk A., Kuokkanen A., Spangenberg J.H., 2019. *Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability*. European Environmental Bureau. eeb.org/decoupling-debunked

Operating under a new mandate, reclaimed public companies have an important role to play in promoting efficiency and controlling and reducing demand. But the promotion of efficiency is an economy-wide challenge, and it is necessary to have realistic expectations in terms of what reclaimed energy companies might be able to accomplish.

It is here that the imperatives of planning and energy management intersect. This will require reclaimed utilities taking charge of assessing what is *technically* possible. For buildings, the IEA has estimated, in the global South—where building stock is expanding rapidly—up to 60% of buildings that will be in use in 2030 are not yet built. This presents opportunities for utilities to partner with governments to establish building codes to ensure that new buildings are as efficient as possible.⁴⁵⁸

Because of the commodification of electricity, there is currently no incentive on the part of either private energy companies or marketized SOEs to introduce measures that might control or reduce consumption. In fact, quite the opposite is true. For example, technologies that could be introduced to reduce demand not only cost money, but their introduction would likely mean less electricity would be consumed and revenues would fall. From the standpoint of for-profit electricity companies, this amounts to a “lose-lose” proposition.

Decommodification will allow reclaimed companies to pursue strategies to advance efficiency in an integrated and planned way. In addition to helping to reduce emissions, higher levels of efficiency could reduce the amount of new generation capacity that will need to be installed in the coming decades.

Energy Efficiency and Climate Jobs

The *public pathway* approach is the product of years of trade union analysis and activism, in which unions from the South have played a leading role. In 2016, the Alternative Information Development Center (AIDC) produced a body of research that provided the basis for the One Million Climate Jobs Campaign in South Africa, a campaign that was emulated in several countries, including the UK where it was endorsed by the Trades Union Congress.⁴⁵⁹

The OMJ campaign makes visible the potential connection between large numbers of available workers and the capacity to generate socially and ecologically necessary work. It has been almost 20 years since the UN’s Human Settlements Program released a landmark report called *The Challenge of the Slums*.⁴⁶⁰ Released in October 2003, the report noted that one third of the

⁴⁵⁸ IEA, “Recommendations of the Global Commission for Urgent Action on Energy Efficiency,” June 2020, <https://www.iea.org/reports/recommendations-of-the-global-commission-for-urgent-action-on-energy-efficiency>, p. 12.

⁴⁵⁹ <https://aidc.org.za/download/climate-change/OMJ-booklet-AIDC-electronic-version.pdf>

⁴⁶⁰ UN Habitat, *The Challenge of the Slums: Global Report on Human Settlements*, 2003. <http://www.unhabitat.org/pmss/getPage.asp?page=bookView&book=1156>

global urban population — roughly 803 million people — lived in slum conditions.⁴⁶¹ By 2020, the number had grown to 1.3 billion.⁴⁶² The 2003 UN Habitat report concluded that the “main single cause of increases in poverty and inequality during the 1980s and 1990s was the retreat of the state.”⁴⁶³ In 2020, UN Habitat’s *World Cities Report* referred to “decades of neglect in public or social housing and inadequate state intervention to regulate the private market and produce adequate and affordable housing for all segments of the population.”⁴⁶⁴

The report also noted that environmental and conservation projects add value to the urban environment, but this has often led to increases in housing prices and rents. The report warned of “climate gentrification,” excluding poor people “not only from housing and public space but also from safe and protected environments.”

Showing a different way forward, reclaimed energy companies can partner with municipal and local authorities to address high unemployment levels by developing the kind of direct-hire public works programs that were commonplace as far back as the 1930s during the “original” New Deal in the United States.

The World Bank has repeatedly stated that those who provide environmental services should be compensated through payments from beneficiaries of these services, and that the social and ecological benefits far outweigh the cost of paying for the services.⁴⁶⁵ But there is no space in the neoliberal model for direct-hire public works programs that could be publicly financed. The “beneficiaries” of emissions reductions will be young children or those yet to be born, and thus unable to pay for these services. By the time these children reach middle age, the world’s climate could be so unstable that civilization itself could be facing irreversible breakdown. This scenario exposes the bankruptcy of the current for-profit model, and the urgency of a *public pathway* alternative.

Note to Editor:

Two page conclusion to be added here

⁴⁶¹ Global Urban Observatory, *Slums of the World: The face of urban poverty in the new millennium?* New York, 2003, p. 10. Cited in Mike Davis, “Planet of Slums,” *New Left Review* 26, March-April 2004.

⁴⁶² Although an increase in absolute numbers, the proportion of slum dwellers has fallen by several percentage points from 2003 to 2020. Urban Habitat, *World Cities Report: 2020*
https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf

⁴⁶³ Need a page reference

⁴⁶⁴ Urban Habitat, *World Cities Report: 2020*

https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf

⁴⁶⁵ World Development Report XXXX



GLOSSARY OF TERMS

Compiled by
Anna Kasradze & Andrew Pezzullo

**SECOND DRAFT
UPDATED DECEMBER 2022**

GLOSSARY OF TERMS

Compiled by Anna Kasradze and Andrew Pezzullo

Addis Abada Action Agenda - The result of the third international conference on financing for development in Addis Abada, Ethiopia, the Action Agenda is a global framework for aligning the financing flows necessary to implement social development goals (SDGs) with economic, social and environmental priorities.

Belt and Road Initiative - The Chinese government's international development program, which invests in developing countries' infrastructure and technology and advocates for green development and free trade.

Blended Finance - The strategic use of development finance and philanthropic funds to mobilise private capital flows to emerging and frontier markets.

Bretton Woods - The 1944 conference in Bretton Woods, New Hampshire of allied powers that established the International Monetary Fund (IMF), World Bank, and the international monetary system which governed monetary relations between states roughly until 1976. The year 1947 saw the formation of the General Agreement on Tariffs and Trade (GATT) that in 1995 became the World Trade Organisation (WTO). Known collectively as the "Bretton Woods Institutions" (BWI), the IMF, World Bank and the GATT/WTO began to reflect the growth of neoliberal ideas in the late 1970s following the oil crisis, the sharp rise in inflation, and the crisis of Keynesian system of economic management.

Buen Vivir - Imperfect translations of the Andean concepts of *suma q qamaña* in Aymara and *sumak kawsay* in Quechua, Buen Vivir or Vivir Bien reflect an indigenous cosmivision that emphasises living in harmony with nature and one another. The indigenous philosophy of Buen Vivir has inspired social movements for food sovereignty, climate justice, and energy citizenship around the world.

Capacity auctions - The process of government bodies awarding power purchase agreements to private companies, providing payments for investment in new capacity and the maintenance of existing capacity.

Carbon capture and sequestration (CCS)- Technology for "capturing" and storing greenhouse gas emissions to prevent them from reaching the atmosphere. CCS projects have yet to reach commercial scale, and just a few dozen pilot projects are operational globally, mostly in power generation and energy-intensive manufacturing.

Carbon Intensity - The amount of carbon emissions emitted per unit of energy consumed (CO₂ emissions/energy) or per good or service produced. This measurement is sometimes discussed in relation to a country's GDP, but is more often used to compare the emissions impact of different energy sources (eg. coal is more carbon intense than natural gas). Lowering the

carbon-intensity of fossil fuels is emerging as a preferred strategy for reaching net-zero emissions targets among fossil fuel companies.

Carbon Lock-in - The set of technologies, institutions and norms that are inconsistent or incompatible with a low-carbon future and limits progress toward that goal. It is a process by which social, political and technical barriers to decarbonization interact to create an inertia that favours the development of fossil fuels.

Climate ambition - A publicly professed climate mitigation and/or adaptation “goal” by states, companies, or other organisations.

Climate Finance - Local, national or transnational funding from public, private and alternative sources that seeks to support climate change mitigation and adaptation actions.

Commodification - To reduce a unique, complex, and multi-faceted thing to a single value or interchangeable unit, often monetary.

Common But Differentiated Responsibilities - The idea that all countries should contribute to climate mitigation and adaptation, but that some countries should contribute more based on their different historical emissions and capabilities to contribute.

Concessional financing - Below market rate finance provided by major financial institutions, such as development banks and multilateral funds, to developing countries to accelerate development objectives.

Cumulative emissions - All emissions in the atmosphere to date from all sources and countries.

Debt Moratoria - An authorised postponement or deferral of the maturity of, or the deadline for paying a debt or performing an obligation.

Degrowth - an extensive framework that is based on critiques of the growth-centred economic system in which we are living. Degrowth emphasises the need to reduce global consumption and production and advocates a socially just and ecologically sustainable society with social and environmental well-being replacing GDP as the indicator of prosperity.

Development Finance Institutions (DFIs) - National and international development finance institutions (DFIs) are specialised development banks or subsidiaries set up to support private sector development in developing countries. They are usually majority-owned by national governments and source their capital from national or international development funds or benefit from government guarantees. DFIs often finance projects that would otherwise not be able to get financing from commercial lenders.

Distributed Energy Resources (DERs) - Small, modular, energy generation and storage technologies that provide electric capacity or energy where you need it. Typically producing less

than 10 megawatts (MW) of power, DERs can usually be sized to meet your particular needs and installed on site. DERs may be either connected to the local electric power grid or isolated from the grid in stand-alone applications. DER technologies include wind turbines, photovoltaics (PV), fuel cells, microturbines, reciprocating engines, combustion turbines, cogeneration, and energy storage systems.

Ecological Debt - Ecological debt refers to damage caused over time to ecosystems, places and peoples through production and consumption patterns; and the exploitation of ecosystems at the expense of the equitable rights of other countries, communities or individuals. It is primarily the debt owed by industrialised countries in the North to countries of the South on account of historical and current resource plundering, environmental degradation and the disproportionate appropriation of ecological space to dump greenhouse gases (GHGs) and toxic wastes.

Ecosocialism - a political vision of a transformed society in harmony with nature, and the development of social and production practices that can attain it. Ecosocialist thought articulates radical alternatives to all socially and ecologically destructive systems, such as patriarchy, racism, homophobia and the fossil-fuel based economy. It is based on a perspective that regards other species and natural ecosystems as valuable in themselves and as partners in the preservation of just society and a resilient ecosphere.

Emerging and Developing Economies (EMDEs) - A large, but sometimes ill-defined group of developing countries spanning Africa, Asia, Europe, Latin America, and the Middle East. Generally, EMDEs have low but increasing per-capita energy consumption, an expanding industrial base, and rising incomes.

Energy arbitrage - Power providers purchasing more electricity during off-peak (low demand) periods, storing that electricity and discharging it during peak periods.

Energy Charter Treaty (ECT) - A legally binding multilateral agreement covering investment promotion and protection, trade, transit, energy efficiency, and dispute resolution. It requires guaranteed returns for private investors and includes over 50 countries of Europe and Eurasia.

Energy expansion - Growth in the volumes of energy produced in response to increasing demand. TUED argues that the world is not undergoing an energy transition (a decrease in certain types of energy and an increase in other cleaner ones) but an energy expansion, in which both fossil fuel and renewable energy production is increasing.

Energy Sovereignty - A country's ability to decide independently about the structure and sources of its energy supply and about its energy policy, including energy market and system operation rules. Critically, it also implies the ability to make decisions about energy free from foreign influence and interference.

Energy stagnation - The persistence of energy poverty.

European Commission - The executive governing body of the European Union, a cabinet with 27 members headed by a president.

Final Energy Consumption - The total energy consumed by end users, such as households, industry, or agriculture. It is the energy which reaches the final consumer's door and excludes that which is used by the energy sector itself. It is usually disaggregated into the final end-use sectors: industry, transport, households, services and agriculture.

“Full Cost Recovery” Model - the generation of sufficient revenue through the pricing of a service to cover the full cost of provision. Costs include operating, maintenance, administration, research and development expenditures, financial costs and capital investments in facilities (including depreciation, interest and equity return at a level sufficient to sustain the systems in perpetuity and achieve the mandated level of service as a minimum).

Gigatonnes (Gt) - A gigaton is a metric unit of mass, often used when discussing human carbon dioxide emissions. A gigaton is 1,000,000,000 tonnes and, by comparison, is the mass of all land mammals in the world other than humans. The planet currently releases 40 gigatonnes of carbon into the atmosphere every year.

Global Marshall Plan - The idea is based on the post-World War II Marshall Plan in which the United States funded European nations' reconstruction of their economies. The Global Marshall Plan calls for mass wealth and technology transfers from developed to developing countries to advance their sustainable development.

Global public goods - Goods secured through public spending whose benefits are available to everyone globally (e.g. a stable climate).

Global South - The poor countries concentrated in the southern hemisphere (in Latin America, Africa, Asia, and small islands). Often former colonies of Northern countries.

Global Union Federations - An international federation of national trade unions, mostly organising in specific sectors.

Green growth - An idea of environmentally sustainable capitalism, emphasis on growing wealth (and by extension, resource use) rather than redistributing it.

Green structural adjustment - The traditional neoliberal policies of private ownership and control of public goods with a for-profit mandate, but now applied to new innovations needed in the energy sector and presented as the solution to effectuating a green energy transition.

Independent Power Producers (IPPs) - Non-utility, for-profit commercial enterprises who own and operate power plants and sell their generated electricity to utilities, government buyers, or other end users.

Intergovernmental Panel on Climate Change (IPCC) - A United Nations body at the forefront of providing policymakers and the public with regular scientific reports on climate change and its consequences.

International Monetary Fund (IMF) - An international financial institution in which countries contribute funds then allocated as short to medium term loans to countries experiencing economic crises in exchange for certain policy reforms.

International Renewable Energy Agency (IRENA) - An intergovernmental organization mandated to facilitate cooperation, advance knowledge, and promote the adoption and sustainable use of renewable energy.

Just transition - A decarbonization pathway that offers distributional justice to workers and disadvantaged groups and countries.

Kyoto Protocols - Agreements in 1997 and 2012 extending the UNFCCC in which countries adopted binding or non-binding greenhouse gas emissions reduction goals.

Liberalisation - Removing barriers to investment and economic control by foreign private interests.

Liberalised Energy Markets - Structural economic reforms (associated with neoliberalism of 1980s and 90s) that open all aspects of the energy sector (production, generation, transmission and distribution) to market competition among private entities with the ostensible goal of increasing efficiency, reducing prices, and attracting private investment. Liberalisation also often includes the forced denationalisation of public energy utilities as well as the process of unbundling, or requiring market competition by separating activities (eg. production and generation) that were once provided by one regulated, often public utility.

Managed Decline - An open-ended, even contested term to describe the balancing of the managed phaseout of fossil fuels from the energy system along with the rapid introduction of non-carbon based fuel sources accompanying wholesale electrification to meet economy-wide decarbonization goals.

Million barrels per day (b/d.) - Barrels per day (B/D) is a measure of oil output, represented by the number of barrels of oil produced in a single day.

Modern renewables - A category referring to energy sources that are not fossil carbon-based, non renewable, or radioactive. Modern renewables can include a wide array of renewable energy sources, but generally refer to solar, wind, biomass, geothermal, and hydropower (sometimes even referring near-exclusively to wind and solar). Notably modern renewables do not include carbon-free energy sources like nuclear power.

Multilateral Development Banks (MDBs) - Organisations of donor and borrowing member countries that provide financing and advice for the purpose of economic advancement in developing countries. These banks include the World Bank and Regional Development Banks and finance development projects worth billions of dollars throughout the world.

Nationally Determined Contributions - Each country's self-determined goal to reduce its greenhouse gas emissions under the Paris agreement.

Net-zero emissions - Releasing less greenhouse gases into the atmosphere than are absorbed.

OECD countries - Often used a shorthand for developed countries, the OECD intergovernmental organisation represents a group of 38 high-income, developed countries with the stated mission of promoting free markets, liberalised world trade, and democracy. Together, the economic activity of the group of countries represented by OECD is 62.2% of nominal GDP while the represented population size is only 1.38 billion.

Official development finance - Government aid that promotes and specifically targets the economic development and welfare of developing countries, as opposed to foreign investment for business purposes.

Paris Agreement - A 2015 agreement by 196 countries to limit global warming to below 2 degrees Celsius compared to pre-industrial levels. Under the agreement, countries are supposed to set increasingly ambitious decarbonization goals every five years.

Paris Climate Targets - Ratified in 2016 by 196 states in attendance at COP21 in Paris, France, the Paris Agreement set climate targets to keep the mean global temperature rise to below 2°C under pre-industrial levels and preferably to 1.5°C. To meet these targets, each country is expected to set, plan for, and make progress towards individual country-by-country targets. Notably, the Paris climate targets are non-binding and lack a mechanism for enforcing specific emissions targets.

Per Capita Emissions - The amount of greenhouse gas emissions of an average citizen in a country. Per capita emissions are calculated by dividing a country's total emissions by its population size.

Pink Tide - A political wave of left-wing governments in Latin American democracies moving who resisted a neoliberal economic model at the start of the 21st century.

Polluter Pays principle - The notion that the polluter must pay to address the social costs of their pollution, e.g., oil companies should pay for climate adaptation. However, in practice, the costs are often passed on to customers. Moreover, it is difficult to allocate responsibility to the many actors involved (companies, governments, consumers, etc.) for specific shares of pollution.

Power purchase agreements (PPAs) - Contracts between states, regions, or municipalities and private energy providers to provide energy over a certain number of years, usually with a guaranteed rate of return for the private companies.

Public pathway approach - Expansion of public ownership of key sectors, particularly energy, instead of relying on private companies to equitably decarbonize the world.

Public-Public Partnerships (PUPs) - A collaboration between two or more public authorities or organisations, based on solidarity, to improve the capacity and effectiveness of one partner in providing public services.

Regional Development Banks (RDBs) - Multilateral financial institutions that provide financial and technical assistance for development in low- and middle-income countries within their regions. RDBs includes the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), and the Inter-American Development Bank (IDB).

Solidarity Model - Implemented in Costa Rica between 1998 and 2002, the Solidarity Model was a mechanism to promote integration and solidarity in the identification and solution of local problems. The project sought to encourage citizen participation at the local level in order to diagnose community problems and their possible solutions through concerted action between municipalities and governmental institutions, like Costa Rica's state-owned power company.

State-owned Enterprises (SOEs) - Enterprises owned or controlled by the state or the government that produce or provide goods or services to the public, often potentially in competition with private enterprises.

Structural adjustment agenda - A set of policies that rich countries coerce poor countries to adopt in exchange for loans, including cutting public services and raising revenues, increasing exports via resource extraction, lifting restrictions on international trade and foreign investment, privatising state owned industries and cutting state subsidies.

Structural Adjustment Programs (SAPs) - The imposition of structural reforms on countries experiencing economic crises in exchange for loans from the International Monetary Fund (IMF) and World Bank (WB). These programs have included the implementation of free market policy, liberalisation of trade, privatisation of public services, reducing barriers to foreign capital, and reducing budget deficits through austerity.

The Stern Review - The Stern Review on the Economics of Climate Change was a 2006 report released on behalf of the UK government by Nicholas Stern, former chief economist of the World Bank. The report considered climate change the largest-ever "market failure" and called for accelerated climate action, primarily carbon pricing, government subsidies of low-carbon technologies, and private sector investment.

Transmission - The transportation of electricity across large distances; higher voltage and lower resistance than distribution (lower voltage and local distances).

Transnational Institute - A Brussels-based international research and advocacy institute committed to building a just, democratic, and sustainable planet.

Unbundling - To split a company or conglomerate into its constituent businesses, especially prior to selling them off,

United Nations Framework Convention on Climate Change (UNFCCC) - An international environmental treaty signed by over 150 countries to address human-induced climate change. Established in 1992, the framework called for ongoing scientific research and regular meetings, negotiations, and policy agreements.

World Bank - An international financial institution in which countries contribute funds then allocated as long term loans and grants to countries experiencing economic crises in exchange for certain policy reforms.

“Conference of the Parties” - The decision making body of the United Nations Framework Convention on Climate Change (UNFCCC) in which UNFCCC member states’ representatives (and others) meet annually to reassess their progress.

“Enabling environment” - Legal conditions favourable for investment by private interests, usually at the expense of the public purse and labour and environmental standards.

“Global Green New Deal” - Global sustainable development model based on public goods that can address poverty and prevent resource overuse and exploitation.

“Market failure” - When market dynamics lead to socially undesirable outcomes, e.g., when the social costs of goods are not reflected in their prices and not borne by their consumers. The phrase implies that failure is a state of exception for markets.

“Out of Market Protections” - Government policy, like price controls, tariffs, and favourable financial contracts, that uses public money to subsidise and support the growth of private industry. In this case, the renewable energy sector has been a recipient of substantial “out of market protections” and can attribute much of its growth to government subsidies and protections.

“Peak emissions” - The point in time after which greenhouse gas emissions will shrink in each following year. Peak emissions can be analysed on a country-by-country basis or in terms of total global emissions.

“Privatise to decarbonise” - Developed by TUED, the term for the notion that energy privatisation is necessary in order for the private sector to lead the transition to a low carbon economy.

“Satisfactory returns” - A projected return on investment (ROI) high enough to attract sustained private investment in what otherwise might be a risky or emerging market.

“Social dialogue” - Co-operative, non-confrontational model of class relations between workers, employers, and governments that includes negotiation, consultation, or simply exchange of information among these groups on economic and social issues of “common interest.” Social dialogue is related to “social partnership” embodied in the 1958 Treaty of Rome that laid the foundations for today’s European Union.

Utility Scale Renewables - large power plants (primarily solar and wind) that produce electricity for the utility grid. In terms of size, utility scale renewables generally refer to power plants that have a total generation capacity of 1MW or greater.