

Who Owns Power in the Energy Transition?

Evaluating deregulation and public-private partnerships of public energy utilities in 5 international geographies.



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Executive Summary

Who Owns Power in the Energy Transition?

Governments globally have privatized and marketized the electricity sector as part of the larger economic trend toward neoliberalism over the past 50 years. Fully decarbonizing the electricity system will require large-scale, global transformation. Can the private sector— increasingly holding more of the system— drive this transformation while also providing affordable service and a just transition? We argue that it cannot. **We propose that democratic, public ownership of the electricity grid can best deliver on energy affordability and a green transition.**

However renewable energy emerged during the turn toward privatization, meaning that deployment has largely been managed via private companies. In some places, renewables have entered an already-marketized system and projects are running up against the confines of the market system. In other cases, renewables have actually acted as a mechanism to undercut publicly held utilities or energy systems — through a range of different sorts of “public-private” partnerships. These sorts of partnerships have come often at the cost of union labor and higher capital costs. We explore these dynamics through five case studies, focusing on examples where there either is, or previously was, a strong public sector utility.

URUGUAY: Uruguay made a rapid shift to 95 percent renewable power within a decade— successfully accomplishing an authentic energy revolution. The national public utility coordinated wind power installations and fossil fuel wind downs. While the public utility managed the transition, Uruguay chose to work with private developers to install the wind assets. Now private companies hold 81 percent of renewable capacity, extracting substantial rents from the assets that could have been held publicly. The Uruguayan transition shows that publicly-owned systems can deliver clean and affordable energy, but also why states should fully evaluate the long term effects of partnering with private firms in the transition.

SOUTH AFRICA: South Africa’s national state-owned power utility, Eskom, has historically held control over power generation. After governmental neglect and various efforts to commercialize Eskom, the nation has turned to public-private partnerships and market deregulation to drive investment. Cobbled by new profit requirements and saddled with an aging coal fleet, privatization advocates were able to argue that Eskom is ill-equipped to green the electricity system. Thus, renewables have largely been brought into the country via a more liberalized market scheme,

creating a deeply unequal, dysfunctional, and unjust energy system in the process. Advocates are now calling for a “Green New Eskom” to democratize the transition for workers and energy users alike.

UNITED KINGDOM: The UK started with a publicly run, vertically integrated energy system. However, by the early 2000’s, the UK had one of the most heavily marketized energy systems in the world. The market has failed to rapidly transition to renewables on the grid and the UK has had to use a heavy governmental hand in order to keep renewables interesting to the private sector. As the imperative to decarbonize and ensure resilience becomes more dire, advocates are demanding a shift back to a publicly owned, vertically integrated Great British Energy to help create the stability needed to ensure renewables deployment, even amongst ever-increasing turbulence.

UNITED STATES: Nebraska stands out in the United States’ energy landscape as the only state with fully publicly-run poles and wires, managed by 166 localized public systems. Recent national energy trends have affected the structure of Nebraska utilities, turning them toward more public-private partnerships and corporatization. Federal structural incentives for renewables have heavily favored private ownership, which means that almost all of the renewable energy development in the state has been brokered via public-private partnerships– sometimes leading to negative community outcomes. The recent Inflation Reduction Act (IRA) opened up new possibilities for public ownership of renewables, the question will be if Nebraska takes up a more active role in building its own renewables instead of relying on the private sector.

FRANCE: The French are known for their public planning. The electric utility, Électricité de France (EDF), was a beacon of modernization and rebuilding in the postwar period, providing high quality jobs and low cost services. In the 1990’s, the context around EDF began to change. The EU progressively liberalized its electricity system, spinning out the different pieces of the sector into discrete markets and entities, increasing costs to consumers and making it more difficult to

do long term planning. Now in the era of the green transition, France is experiencing the drawbacks of a market-based system to make the overhaul to a green transition. EDF could play a much stronger and beneficial role under a more holistic and democratic approach to energy planning overall.

While renewables may have emerged in an era of utility privatization and market liberalization, it does not mean that the necessary green transition will come to bear under such conditions. The trends we explored in the five case studies show that privatization has not brought a rapid, affordable, and equitable transition. In fact, while the state may have privatized power, it conversely also had to invest massive public dollars to incentivize private players to build renewables.

We argue that public ownership over the power sector can be a critical ingredient to meeting the moment of decarbonization. This would provide the public with the opportunity for more coordinated planning across large geographies– providing opportunities for public input, high roads jobs, and effective land use management. It would also potentially lower the cost of the transition, eliminating the need for a complex web of sticks and carrots to move a heterogeneous group of private actors to move in a coordinated direction. Instead, the state could directly invest public money in a strategic electricity decarbonization plan. Ultimately, the renewable energy transition is an opportunity to remake the electricity sector so that it prioritizes green energy, affordability, and equity– and an empowered, democratic public system could deliver that future.

Introduction

All over the world, a growing chorus of climate organizers, advocates, and policy analysts are calling for “system change, not climate change,” articulating a vision of mitigating and adapting to the climate crisis in a way that rearticulates political and economic structures at the same time.¹ While almost every part of the economy and built environment will be affected by the green transition, the electricity system stands out as a sector that requires massive transformation across the world. However, the visions for that transition are radically diverse, from competitive energy markets of the 1990’s put into hyperdrive to push out fossil fuels, to campaigns for comprehensive national public ownership to facilitate large-scale planning, to wind up renewables.

The past 30 years in electricity, driven largely by a neoliberal ideology emerging from the United States and the United Kingdom and executed abroad with the support of the World Bank and IMF financing, have been characterized by privatization and liberalization (or deregulation, in energy terms).² While we have seen reinvigorated discussions of industrial policy strategies to coordinate transition, governments continue to rely heavily on private industry to pave the way.³ In fact, in the case of some public institutions, the green transition has been an opportunity for further privatization.

In this paper, we look at case studies of publicly owned utilities currently operating in 5 different geographical contexts to understand how the transition to green energy is affecting the institutions’ operations and provision of service—interrogating the under-discussed

trend of the green transition facilitating privatization. In some cases, we see public-private partnerships emerge in ways that assign risk to the public sector, limit decision making power, and privatize revenue streams, hollowing out existing, historically public institutions. In other cases, neoliberalism has driven liberalization of the energy sector, sidelining historic public institutions and, often, draining them of capacity and revenue while the state continues to derisk private actors’ engagement in the renewables markets.

In either case, renewable energy has emerged within the context of neoliberal capitalism that hinders the world’s ability to provide affordable service and effectively and equitably transition to renewable energy. We, the authors of this report, propose that democratic, public ownership of the electricity grid can best deliver on energy affordability and a green transition, and present the following case studies as examples of how a range of “public-private” models that have proliferated over the last several decades ultimately privilege private profits. In the cases we investigated—Uruguay, South Africa, the United Kingdom, Nebraska in the United States, and France—we dug into the history of each public organization, following the thread to the current moment to understand the structural incentives at play facilitating privatization and the impact on local actors, as well as the opportunities for each organization to genuinely serve the public going forward.

1. Naomi Klein, *This Changes Everything: Capitalism Vs The Climate* (New York: Simon and Schuster, 2014).

2. Sharon Beder, *Power Play* (New York: The New Press, 2003).

3. Patrick Bigger and Jesse Strecker, “Primer: Green Industrial Strategy for Just Transitions,” *Climate and Community Project*, (2023): <https://www.climateandcommunity.org/green-industrial-strategy>.

Case Studies

Uruguay's Renewables Revolution: Changing Winds

By Daniel Chavez

Uruguay's transition to renewable energy has rightly won accolades and international recognition for its efficacy and its speed. This was accomplished through ambitious public sector effort and the precondition of government support. The state run utility, Administración Nacional de Usinas y Transmisiones Eléctricas (UTE) was foundational to the country's transition success. UTE provided critical transmission capacities and bought into long-term wind contracts that got the country to 95 percent renewables in under 10 years. However, instead of allowing UTE to build the renewables itself, the country relied on private, largely foreign, companies to develop the renewable projects. Since the kickstart of the transition in 2005, the country has undergone

additional privatization of the electricity sector that risks allocating more and more benefits to private companies, raising costs for consumers, and ultimately imperiling the stability of the sector.

A Hard Won Success, Now at Risk

Uruguay is a politically stable and socially advanced South American country that rarely appears in the international news.⁴ The few times it has featured in global headlines have been for its soccer triumphs and, in recent years, for the scope and speed of its energy transition. The country made history rapidly shifting to renewables—Uruguay transitioned to 95 percent renewable power in less than a decade.⁵ Between

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4. Uruguay is a 'high-income' and a 'very high human development' country by World Bank and UNDP standards. It has a strong welfare state and the region's most equal income distribution, largest middle class and lowest percentage of the population in poverty. (International Trade Administration, "Uruguay - Country Commercial Guide," *International Trade Administration*, 2024, <https://www.trade.gov/country-commercial-guides/uruguay-market-overview>).
 5. Sam Meadows, "Uruguay's green power revolution: rapid shift to wind shows the world how it's done," *The Guardian*, 2023, <https://www.theguardian.com/global-development/2023/dec/27/uruguays-green-power-revolution-rapid-shift-to-wind-shows-the-world-how-its-done>.



Uruguay



Conference of the Parties '21 (COP21) in Paris in 2015 and COP28 in Dubai in 2024, Uruguay has been the focus of hundreds of journalistic, academic, and policy articles celebrating its rapid and radical transition. In July 2014, *El País* (Madrid)—the paper with widest distribution in the Spanish-speaking world—headlined, “Uruguay’s Renewable Energy Revolution” to report how a country that “had no oil or natural gas resources” and in which until recently its “high energy prices were dragging down productivity”, now relied on renewables “like no other place in the world”, becoming “a major example of how to make a dramatic shift in a very short amount of time”.⁶

The excitement about the Uruguayan transition is backed by objective evidence. The country accomplished an authentic energy revolution. In just 4 years, between 2013 and 2017, wind power went from almost 0 to more than 30 percent of the total installed energy capacity in electricity generation. Today, fossil fuels contribute a marginal proportion of its power mix, while the country has achieved universal access. Uruguay’s population of 3.4 million is covered by the wholly state-owned and managed transmission and distribution network. The national utility, the Administración Nacional de Usinas y Transmisiones Eléctricas (National Administration of Power Plants and Electrical Transmissions, or UTE) has set up distributed generation alternatives to meet the needs of the remaining 0.3 percent of the population that cannot be connected to the grid, through the installation of solar panels in the most remote areas of the country.⁷

Nowadays, Uruguay, a country that for decades had to spend massive resources on importing fossil fuels to supplement its in-country hydroelectric, is exporting electricity to neighboring Argentina and Brazil. In 2023, despite having suffered the most severe and prolonged drought in recent history, 91 percent of the country’s

electricity was generated by renewable sources: wind power accounted for 44 percent of generation; biomass for 11 percent (1,137 GWh), and photovoltaic for 4 percent (410 GWh). Hydropower, which between 2004 and 2009 (immediately before the start of the transition) accounted for around 76 percent of electricity generation, fell in 2023 to 33 percent, the lowest value in two decades.⁸

From a purely decarbonization perspective, Uruguay’s transition deserves international praise. Nevertheless, a closer analysis of the Uruguayan energy transition (in particular the huge and swift deployment of wind power) demonstrates that advocates must pay attention to the stealth privatization that can be brought about through the proliferation of independent power producers and other profit-driven schemes. In the long run, opening the door to private energy generators might have been a mistake, as subsequent detailed analysis will show..

The radical transformation of the Uruguayan electricity system

The energy transition began with a policy covenant backed by all political parties with parliamentary representation, which agreed to various forms of ownership, management, and financing for renewable power projects. In March 2005, a left coalition—the *Frente Amplio* (Broad Front)—assumed national office for the first time in the country’s history. With climate now on the agenda, parliament enacted the *Política Energética 2005-2030* (National Energy Policy 2005-2030). The policy agreed by all the political parties established concrete goals, mechanisms, and institutional guidelines for the transition. While gaining widespread political support for the policy is impressive, the political parties largely failed to conduct deep engagement with the users and workers of the electricity sector and made compromises for its support.

6. Magdalena Martínez, “La revolución renovable uruguaya,” *El País*, 2014, https://elpais.com/internacional/2014/07/10/actualidad/1405027005_646202.html.

7. “En Uruguay el 100% de los hogares estarán electrificados para 2024,” *Gobierno de Uruguay*, 2022, <https://www.gub.uy/presidencia/comunicacion/noticias/uruguay-100-hogares-estaran-electrificados-para-2024>.

8. “91,2% de la energía eléctrica generada en Uruguay en 2023 fue renovable,” *La Diaria*, 2024, <https://ladiaria.com.uy/articulo/2024/1/912-de-la-energia-electrica-generada-en-uruguay-en-2023-fue-renovable/>.

The transition relied heavily on their strong vertically integrated power company, UTE, fully owned by the Uruguayan state. More than a century after its founding, the public enterprise has remained a highly efficient company in terms of its services' quality, reliability, and economic stability. UTE has historically been the hegemonic actor in the electricity generation sector and is the owner and sole operator of the transmission and distribution network.

Even with UTE's strong track record, the 2005 energy policy took a private developer strategy. Instead of setting up UTE as the primary developer and owner of the new wind assets, it required the utility to enter into public-private partnerships largely via Power Purchase Agreements (PPAs) with 20-year contracts. UTE was still integral to the transition since it not only provided the auxiliary infrastructure including transmission and interconnection, but it also acted as the wind project's offtaker and guarantor. However, it still radically shifted the energy terrain where UTE had historically owned almost all of the power generation. Currently, 81 percent of the installed renewable capacity is in the hands of (largely foreign) private companies. UTE controls the remaining 19 percent of installed capacity, but mainly through indirect investment structures: public limited companies, trusts, and operating leases.⁹

Left parties and the trade unions have opposed the expansion of private providers in the renewable energy sector, pointing out that it constitutes a new and covert form of privatization. They have identified several factors that contribute substantially to private investors' ability to take home all-too-high profits: UTE's commitment to buy all the wind power generated even when it is not needed, the long, twenty-year agreement

periods of the PPAs and the fixed energy price. As an Uruguayan economist has explained (echoing debates around the *derisking state*¹⁰ in Europe and the United States), the state has relinquished the most profitable portion of the energy market—the wind sector—to private capital:

The least profitable component, the burning of fossil fuels in thermal plants that might be necessary to guarantee constant supply, was left in the hands of UTE. There are no risks for private investors since our state-owned utility guarantees them long-term profits. All the risks are transferred to the public sector. In other words, UTE raises the ravens that will tear out its eyes.¹¹

The most recent step in the process of electricity privatization took place in 2023. The new right-wing government coalition authorized changes to the wholesale energy market to make it more flexible for private companies to lure new and large investments into the national industrial sector. Until now, such contracts were difficult because generators were required to have high and costly continuous supply back-up in order to be able to sell directly to large consumers. The parliamentary opposition (*Frente Amplio*) and the UTE workers' union (AUTE) warn that this new regulation will cause the state-owned utility to lose large customers and consequently a sharp drop in revenues. The political left and the trade union movement also argue that the new scenario implies unfair competition, because the contracts between private companies will not cover the costs of adapting the grid to the new energy mix and other fixed generation costs, which will now have to be borne by UTE.¹² At the same time, the narrative currently promoted by the right-wing government and business chambers claims that

9. P. Messina and J. Geymonat (2023) 'Energías renovables y capital extranjero', en R. Alonso, J. Geymonat and G. Oyhantçabal (eds.) *Uruguay for Export: Capital Extranjero y Declive del Empresariado Nacional*, Montevideo: Ediciones del Berretín.

10. Daniela Gabor "The (European) Derisking State." SocArXiv. May 17, 2023. doi:10.31235/osf.io/hpbj2.

11. Pablo Messina, "UTE ante el discreto encanto de la burguesía*," *Hemisferio Izquierdo*, 2016, <https://www.hemisferioizquierdo.uy/single-post/2016/09/07/ute-ante-el-discreto-encanto-de-la-burgues%C3%ADa> .

12. "AUTE cuestiona decreto de venta de energía: "No tiene fundamentación", ahora las empresas van a "competir con UTE, o sea con el mismo Estado que le dio todos los beneficios". Con Gonzalo Castelgrande y Jorge Molinari," 2023, <https://enperspectiva.uy/home/aute-cuestiona-decreto-de-venta-de-energia-no-tiene-fundamentacion-ahora-las-empresas-van-a-competir-con-ute-o-sea-con-el-mismo-estado-que-le-dio-todos-los-beneficios/>.

Uruguay has already begun “a second transition”, in which the private sector is portrayed as the main agent for the implementation of future endeavors—such as the production of green hydrogen for export—made viable by the expanded deployment of renewables in the previous decade.

The Demand for Renationalization

The workers’ demand the full renationalization of electricity generation. This is not wholly unrealistic in a country that has successfully resisted and reversed other waves of privatization in previous decades. In 1992, when the neoliberal government tried to carry out a bulk sell-off of state-owned companies, the enabling legislation was overwhelmingly rejected by the Uruguayan people via referendum. In 2004, 64 percent of the Uruguayan electorate approved a constitutional reform that added to the constitution the consideration of access to water as a human right, laying the foundations for its management to be carried out exclusively in a *public, participatory, and sustainable* manner.

According to official data published in its annual audited balance sheets, UTE invested US\$283 million in 2023 and plans to invest US\$260 million in its 2024 operations.¹³ The company is in good financial health and could have invested more of its own (public) resources in developing wind farms, solar parks, and other forms of renewable generation. International credit agencies have awarded UTE the highest investment grade (AAA).¹⁴ Still, throughout the past decade, the Ministry of Finance did not allow it to invest in renewables as much as it could.

UTE’s sound financial indicators and positive credit rating could have enabled it to obtain sufficient exter-

nal financing to fund the energy transition as a fully state-owned and managed program. The country could have achieved significant savings if the government had allowed UTE to invest directly in wind generation instead of relying on independent power producers. There would have been greater public debt in the short term, but UTE, and the country, as a whole, will lose money in purchasing energy from private suppliers over the longer term.

The crucial importance of public ownership

Latin America has a long history of public ownership, particularly in the energy sector. Uruguay is one of 2 countries in the region that have gained international attention for the scope and depth of their transitions, much to the credit of state-run utilities. Costa Rica is the other outstanding example of efficient and egalitarian public service delivery rooted in public ownership, having developed one of the world’s most sustainable, efficient, and equitable electricity systems. Costa Rica has achieved practically universal provision of electricity—as well as water, health, and education services—and, like Uruguay, shows remarkable scores on equity, quality, public ethos, and environmental sustainability indicators. Since its foundation in 1949, the Costa Rican Electricity Institute (ICE), a state-owned company, has evolved as one of the pillar institutions of a Latin American welfare state that ranks today among the world’s most advanced in terms of social development.¹⁵ Regrettably, like UTE in Uruguay, ICE is facing new covert forms of privatization of the Costa Rican electricity sector.¹⁶

13. “UTE ejecutó plan de inversiones por 283.000.000 de dólares en 2023,” Gobierno de Uruguay, 2024, <https://www.gub.uy/presidencia/comunicacion/noticias/ute-ejecuto-plan-inversiones-283000000-dolares-2023>.

14. “Administración Nacional de Usinas y Transmisiones Eléctricas (UTE),” 2024, <https://www.fixscr.com/emisor/view?type=emisor&id=1702>.

15. Pablo Messina and Martín Sanguinetti, “Public electricity held accountable by Costa Rica’s popular struggle for energy democracy,” Transnational Institute, 2023, <https://www.tni.org/en/article/public-electricity-held-accountable-by-costa-ricas-popular-struggle-for-energy-democracy>.

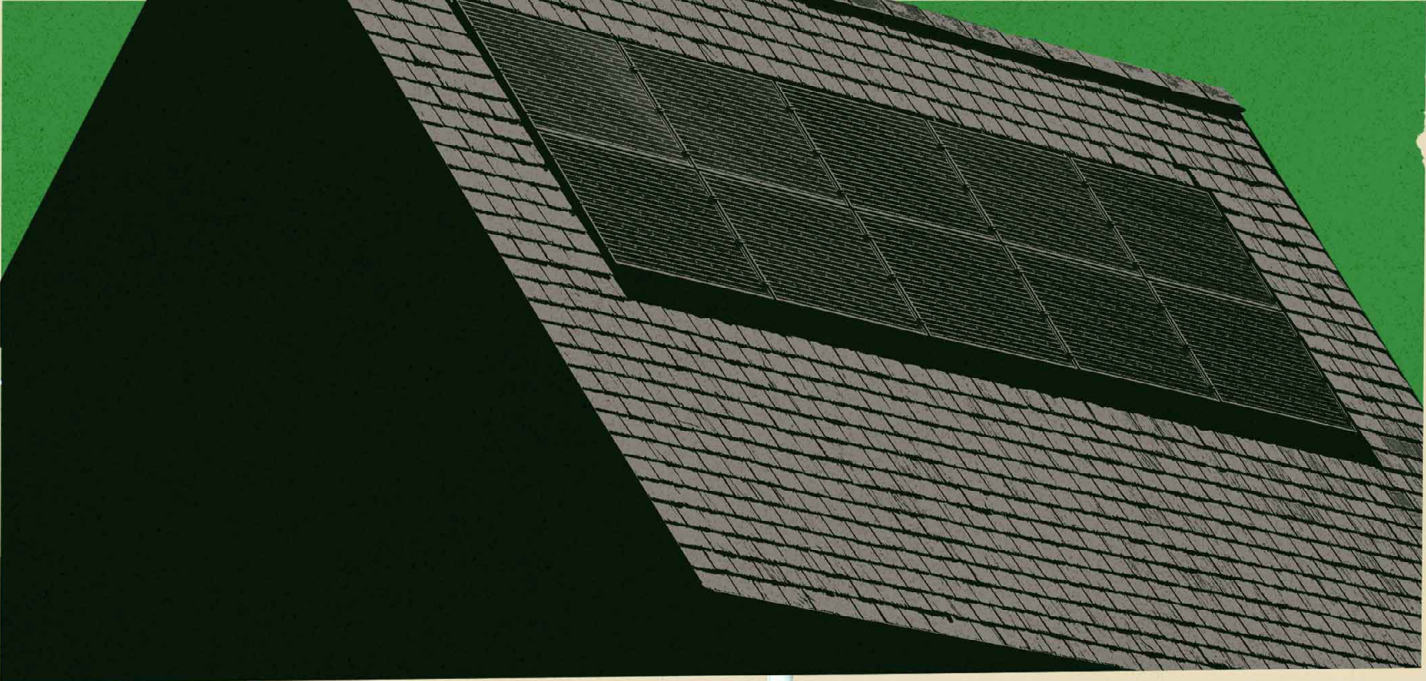
16. Lucia Molina, “Presidente del ICE a la OCDE: Mientras otros suben tarifas, en Costa Rica se reducen con energía renovable,” <https://semanariouniversidad.com/pais/presidente-del-ice-a-la-ocde-mientras-otros-suben-tarifas-en-costa-rica-se-reducen-con-energia-renovable/>.

Latin America offers valuable experiences that could be useful for designing and implementing progressive power system reforms in other regions. Uruguay and Costa Rica have defied the conventional wisdom that posits that public ownership damages the economy and hinders social development, or that the state is an inherently poor provider of energy services. In their successes, and limitations, the Latin American experiences provide critical political lessons for expanding and deepening the *public pathway* to other countries of the world, both in the South and in the North.¹⁷

The Uruguayan transition demonstrates that it is possible to develop a publicly owned system that delivers secure, clean, and affordable energy services, as UTE has been doing for more than a century. Uruguay's deployment of wind power would have been impossible without the previous existence of a strong and efficient national and state-owned energy company. The Uruguayan experience shows the risks of stealth privatization, but it also demonstrates the importance of vertically integrated public utilities and that the state could indeed enable a radical turn to renewables acting in the public interest.

17. Sean Sweeney, "Towards a Public Pathway Approach to a Just Energy Transition for the Global South.," Trade Unions for Democracy, 2023, <https://www.tuedglobal.org/working-papers/second-draft-towards-a-public-pathway-approach-to-a-just-energy-transition-for-the-global-south>.

South Africa



South Africa's Eskom: From Engine of Apartheid to Neoliberal Mess and Beyond¹⁸

By Alex Lenferna

Eskom is South Africa's national state-owned power utility. It has long held a virtual monopoly over power generation in South Africa. Up until just a few years ago, Eskom produced as much as 95 percent of the electricity used in South Africa, predominantly from coal. However, that monopoly has begun to weaken due to government neglect, corruption, and mismanagement of Eskom, coupled with a messy and incomplete decades-long process of privatizing South Africa's energy sector. The increasingly neoliberal government of South Africa has driven the privatization of energy in South Africa both through public-private partnerships and through a liberalization of the market that has driven a recent surge of private sector investment, and the result has been a deeply unequal, dysfunctional, and unjust energy system in South

Africa. In response, social movements are working to reclaim and rebuild Eskom and public and socially owned renewable energy, through efforts such as the Climate Justice Coalition's Green New Eskom campaign. The campaign doesn't just talk about public ownership, but also about democratization and embedding justice into the mandate of the institution.

Eskom's Colonial and Apartheid History

In 1922, the South African government passed the Electricity Act, which set up two institutions: the Electricity Control Board (ECB) and the Electricity Supply Commission (ESCOM, which changed names ultimately

¹⁸. In addition to the references outlined throughout this essay, the piece also draws significantly from several pieces of the author's own work, especially [this piece](#) in Jacobin. It also draws significantly from the [Eskom Transformed Report](#) and the [Short History of Eskom](#), as well as from helpful comments and additions from Dominic Brown who reviewed an earlier draft of this piece.

to Eskom). Eskom supplied electricity on a national scale and embarked on new projects and investments while the ECB regulated the costs of electricity. Eskom was formed in 1923 as a public service, not-for-profit entity, exempt from paying taxes and independent from parliament. It was required by law to sell electricity at cost and to ensure that its projects were in the “public” interest. It produced cheap electricity, which played a vital role in the development of South Africa’s colonial and apartheid economy. Leonard Gentle suggests that Eskom supplying electricity at “neither a profit nor at a loss” de-commodified electricity supply and resembled a type of regulated or Keynesian racial capitalism.¹⁹

Over the next few decades Eskom grew its power supply based predominantly on coal power, which worked to largely serve the mining sector. Much Eskom work was reserved for white workers and the coal contracts benefited predominantly white capital. Then, amid the rise of neoliberalism and economic pressures on Eskom, commercialization of Eskom began in 1987 in earnest. The government of the day had previously initiated the De Villiers Commission of inquiry into “The Supply of Electricity in the Republic of South Africa” (established in 1983), which recommended that Eskom become a profitable business.²⁰ In line with those recommendations, Eskom remained a state-owned entity, but its not-for-profit status was removed, its “public interest clause” was scrapped, and it was now a commercial entity responsible for its own profits and losses. Eskom chose corporatization over privatization—meaning that it was a commercial company with its own strategies and with a distance from the government but committed to supplying electricity to South Africa.

Restructuring Eskom in South Africa’s New Democracy

Following South Africa’s first democratic elections in 1994, the African National Congress took power and has remained in power in the majority ever since—although that may change during the 2024 election, where they are predicted to lose their majority for the first time. One of the first successes of the ANC government was a widespread electrification program that brought power to millions of Black South Africans previously overlooked by Eskom—with the electrification rate increasing from 36 percent in 1994 to 85 percent in 2021. This was achieved through a major collaborative process between Eskom, the ANC government, and local authorities. The ANC government, however, took a turn to a more neoliberal trajectory from 1996, with the adoption of the Growth, Employment and Redistribution macroeconomic framework. In line with that turn, in 1998, under the Eskom Amendment Act, Eskom was required to become a limited liability company with share capital with the country as the sole shareholder.

The shift also meant that Eskom adopted the full-cost recovery model, which put a heavier burden on rate-payers. South Africa has unparalleled levels of inequality and structural mass unemployment and poverty that make cost-reflective rates unaffordable for the majority. Now a corporation with a cost recovery mandate, this meant that Eskom’s couldn’t raise sufficient funding to invest adequately in generation, maintenance, and other key elements.

The World Bank played a role in further privatizing the South African electricity system in the late 1990’s by advocating for the creation of a competitive energy market and unbundling—the separation of generation from transmission and distribution—into separate entities.²¹ The ANC heeded the call, barring Eskom from building any new generation for 5 years, opening up a competitive market, and advocating for unbun-

19. Leonard Gentle, “Eskom to Eskom: From racial Keynesian capitalism to neo-liberalism (1910-1994),” *Electric Capitalism* 50 (2009).

20. “The years of expansion and change - “Electricity for all,” Eskom, <https://www.eskom.co.za/heritage/history-in-decades/eskom-1983-1992/#:~:text=In%20May%201983%2C%20the%20government,grip%20of%20a%20major%20drought>.

21. “World Bank and IMF influence casts shadow over South Africa’s Just Energy Transition Partnership,” Bretton Woods Project, 2022, <https://www.brettonwoodsproject.org/2022/12/world-bank-and-imf-influence-casts-shadow-over-south-africas-just-energy-transition-partnership/>.

dling. ANC politicians maintain that unbundling was not a step toward privatization. However, unbundling is often a precursor to deeper privatization of the energy sector. Unbundling is aimed at accelerating private sector involvement in energy generation, following a decades-long process of privatizing the energy sector. The new electricity context laid the grounds for South Africa's growing energy crisis.

Disaster Capitalism and Eskom's Load Shedding Crisis

Since 2007, South Africa has faced rolling, scheduled power outages, known as load shedding, caused by energy supply failing to meet demand. The amount of load shedding has waxed and waned but has dramatically increased recently. 2022 had a record 205 days with load shedding, only to be beaten by 2023 with 332 days.²² The causes of load shedding are complex, stemming from both a failure to invest in new generation and to properly maintain existing generation due to the unsustainable full cost recovery financing model, and exacerbated by factors such as outsourcing, corruption, maladministration, and more.

The Department of Minerals and Energy's 1998 White Paper on Energy issued a stark warning to invest in new electricity generation by 2007, or else it would face a shortfall in energy supplies. However, instead of instructing Eskom to invest in new public generation, the ANC barred Eskom from new development and tried to attract private investment into the utility with the 2001 Eskom Conversion Act.²³ That investment never materialized, largely because Eskom's prices

were then too low to be profitable enough for the private sector.

Replacing a public service ethos with profit-driven planning and investment was disastrous for South Africans. Years later, Thabo Mbeki, president of South Africa at the time, and one of those responsible for barring Eskom from building new energy capacity conceded that it was a mistake. He said, "We said not now, later. We were wrong. Eskom was right. We were wrong."²⁴

Having failed to build generation or attract new private investment, the warnings of electricity supply shortages came true. Load shedding began in 2007 and has occurred ever since—and with it, the first glimpses of democratic South Africa's emerging energy disaster capitalism.²⁵ The load shedding crisis has often been used as an excuse to push through problematic, corrupt, and overpriced contracts and projects, such as billions of dollars doled out to build coal-power plants Medupi and Kusile. Amidst this ever-worsening energy crisis, current President Ramaphosa has introduced further energy privatization by proposing the solution to the crisis as privately-held renewables.

The messy, privatized rollout of renewable energy in South Africa

Eskom has only ever been allowed to invest a tiny amount in its own renewable energy generation projects thus its own power generation still comes predominantly from coal.²⁶ This means that the vast

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22. Lee Rondganger, "The year we were plunged into darkness: A record 332 days of load shedding in 2023 and counting," IOL, 2023, <https://www.iol.co.za/news/south-africa/the-year-we-were-plunged-into-darkness-a-record-332-days-of-load-shedding-in-2023-and-counting-63eafd30-87c8-4f13-acd0-60071e509239>.
 23. Jeff Rudin, Sean Sweeney and Brian Ashley, "What to do with Eskom? Going beyond and behind the seemingly obvious solutions," The Daily Maverick, 2022, https://www.dailymaverick.co.za/article/2022-07-17-what-to-do-with-eskom-going-beyond-and-behind-the-seemingly-obvious-solutions/?fbclid=IwAR3ogttmXs-oG6uocGUfdhs7cyJqftWXYuOyqiSdzZQZXQDd_5CPj3Eb1q.
 24. News 24, "Mbeki: Eskom was right," News 24, 2008, <https://www.news24.com/fin24/mbeki-eskom-was-right-20080121>.
 25. Alex Lenferna, "South Africa's Energy Transition Is Mired in Disaster Capitalism," Jacobin, 2022, <https://jacobin.com/2022/08/south-africa-eskom-privatization-energy-renewables>.
 26. Eskom, "Generation Plant Mix," Eskom, 2022 <https://www.eskom.co.za/wp-content/uploads/2022/03/GX-0001-Generation-Plant-Mix-Rev-25.docx.pdf>.

majority of South Africa's renewables come from the private sector.

In 2011, the South African government introduced a renewable energy program through a government-led public-private procurement program known as the Renewable Energy Independent Power Producer Procurement Program (REI4P). The REI4P received mixed reviews, with many private sector commentators heralding it as a major success. However, several critics argued that it concentrated benefits in the hands of a few private sector players, had limited social ownership, and was also expensive, at least initially. The high cost of those initial contracts also contributed to higher costs that Eskom needed to recoup. Over time costs came down significantly, making renewables cheaper than new coal but President Zuma pulled the plug.²⁷

The motivations for halting the REI4P were complex, including proclaimed yet often hypocritical and unevenly applied resistance to privatization. A large part of the motivation, though, had to do with a corrupt coal lobby trying to protect its profits from renewable energy—a lobby that was happy to protest the REI4P on anti-privatisation grounds, while reaping rewards through other private energy contracts. A recent study posited that, had the renewable energy program continued apace, the new energy supplied could have prevented nearly all load shedding in 2021 and onward.²⁸ That did not happen though. Instead, for over 6 years both Eskom and the private sector were blocked from investing in large-scale renewable energy generation.

At the same time that renewable energy was being stifled, there was not sufficient or effective maintenance of the existing coal fleet—due to poor management, outsourcing, corruption, and a lack of adequate

resources and incentives to invest in maintenance. Additionally, the failure to invest in new renewable energy generation often meant that there was not enough energy supply to take coal plants offline.

Privatization hyperdrive

Since coming into power in 2018, President Ramaphosa and his administration have been trying to revive government procurement of private renewable energy through the REI4P. However, the program has been beset by major setbacks, including major delays, lack of grid capacity for new renewables in key regions, and many projects failing to reach financial close due to bidding at prices with razor thin profit margins—margins which vanished when commodity prices skyrocketed during both the COVID-19 pandemic and Russia-Ukraine war. Another major factor was resistance from the coal and gas lobbies, including Minister of Mineral Resources and Energy, Gwede Mantashe, a powerful politician and a self-declared “coal fundamentalist” opposed to renewables.²⁹

The Ramaphosa administration worked to further expand renewables in the private sector: lifting licensing requirements for distributed generation projects, tax incentives for solar, and gradually introducing a feed-in tariff so excess energy can be sold into the grid. Unbundling and competitive energy was finally achieved in March 2024.³⁰ Now Eskom is being separated into 3 entities, responsible for transmission, generation, and distribution, with each having their own board. The liberalization efforts of the Ramaphosa Administration are already seeing a massive uptick in private investment in renewable energy. For example, estimates suggest South Africa imported 4GWs of

27. Admire Moyo, “Renewables prove way cheaper than fossil fuels,” *IT Web*, 2016, <https://www.itweb.co.za/article/renewables-prove-way-cheaper-than-fossil-fuels/2j5alr7QAdQ7pYQk>.

28. Ethan van Diemen, “An effective roll-out of renewable energy could have prevented 2021 load shedding and saved billions – report,” *The Daily Maverick*, 2022 <https://www.dailymaverick.co.za/article/2022-06-20-an-effective-roll-out-of-renewable-energy-could-have-prevented-2021-load-shedding-and-saved-billions-report/>.

29. Bryan Groenendaal, “South Africa's Energy Crisis: the Real Reasons for the Delay in Energy Procurement,” *Green Building Africa*, 2022, <https://www.greenbuildingafrica.co.za/south-africas-energy-crisis-the-real-reasons-for-the-delay-in-energy-procurement/>.

30. Republic of South Africa, “National Assembly passes Electricity Regulation Amendment Bill,” *South African Government News Agency*, 2024, <https://www.sanews.gov.za/south-africa/national-assembly-passes-electricity-regulation-amendment-bill>.

solar panels from China in 12 months, equal to about 3 percent of its annual demand.³¹ Estimates further suggest that in the corporate world alone there are thousands of MWs of new energy projects ready to invest.³² But the transition has been messy—the result is what Professor Mark Swilling refers to as a “disorderly, market driven transition.”³³

The next step in the path towards a more neoliberal energy future is the government’s Just Energy Transition Partnership (JETP). The JETP is a partnership between the South African government and Western countries to deliver on climate finance to help South Africa transition. While the government’s JETP plan is still under development, the current neoliberal government seems to be using it as a tool to entrench a private energy future, which weakens localization and hobbles Eskom.³⁴ The investment plan dedicates a tokenistic 0.1 percent to social ownership—meanwhile the government’s February 2023 budget forbids Eskom from investing in new generation. In addition, the latest draft energy plan by the government seems set to drastically curtail government procurement of renewable energy, even through the REI4P, leaving renewable investment largely to the private sector.³⁵ Eskom did establish a fledgling Just Energy Transition office in 2020 which has only recently begun to make some investments into renewable energy, but the new office sees itself facilitating private sector and independent power producer (IPP) proliferation.³⁶

When added up, these efforts mean that Eskom will play a smaller and smaller role in the generation of energy. Indeed, if unbundling proceeds as intended, the establishment of a competitive market could see Eskom’s Generation unit as an increasingly small player. Eskom’s aging, poorly maintained plants will struggle to compete against cheaper, newer renewable energy. As such, several commentators have suggested that this decades-long process of privatization has laid the ground for a death spiral of Eskom as a public utility driving electricity generation.³⁷

What’s So Bad About Privatization?

For many South Africans, tired of over a decade of government dysfunction and blackouts, the widespread entry of the private sector could be seen as a relief. However, as the South African Federation of Trade Unions (SAFTU) warns, that’s how privatization tends to work. In their response to President Ramaphosa’s privatization efforts, they turned to the words of Noam Chomsky, “That’s the standard technique of privatization: defund, make sure things don’t work, people get angry, you hand it over to private capital.”

The problem with privatization is that to invest in renewable energy typically requires securing access to capital and land. In the South African context, both

31. Lameez Omarjee, “SA imported an entire Eskom power station’s worth of solar panels - in just 6 months,” *News 24*, 2023, https://www.news24.com/fin24/climate_future/energy/sa-imported-an-entire-eskom-power-stations-worth-of-solar-panels-in-just-6-months-20230915.
32. Peter Fabricius, “Ramaphosa’s electricity plans ‘significant’, says energy transition expert Mark Swilling,” *The Daily Maverick*, 2022, https://www.dailymaverick.co.za/article/2022-07-26-ramaphosas-electricity-plans-significant-says-energy-transition-expert-mark-swilling/?utm_source=TouchBasePro&utm_medium=email&utm_campaign=First+Thing+27+July+2022&utm_content=First+Thing+27+July+2022+CID_e167b1398d72f66594b3f515e86998db&utm_source=TouchBasePro&utm_term=Ramaphosas+electricity+plans+significant+says+energy+transition+expert+Mark+Swilling.
33. Mark Swilling, “Dark, Dumb and Dangerous: Inside South Africa’s perfect (electrical) storm,” *The Daily Maverick*, 2022, <https://www.dailymaverick.co.za/article/2022-12-12-dark-dumb-and-dangerous-inside-south-africas-perfect-electrical-storm/>.
34. Alex Lenferna, “South Africa’s Unjust Climate Reparations: A Critique of the Just Energy Transition Partnership,” *Review of African Political Economy* 50, no. 177–178: 2023, <https://www.tandfonline.com/doi/full/10.1080/03056244.2023.2278953>.
35. Alex Lenferna, Ferron Pedro, Promise Mabilo, Motlatsi Makhasane and Bertha Letsoko, “We must reject the government’s dirty energy plans,” *Ground Up*, 2024 <https://groundup.org.za/article/we-must-reject-the-governments-dirty-energy-plans/>.
36. Eskom, “Just Energy Transition (JET),” Eskom, <https://www.eskom.co.za/about-eskom/just-energy-transition-jet/>.
37. Andile Zulu, “Eskom’s death spiral caused by policies and political choices,” *Mail and Guardian*, 2022, <https://mg.co.za/thought-leader/opinion/2022-10-10-eskoms-death-spiral-caused-by-policies-and-political-choices/>.

land and capital are still concentrated in the hands of a minority. As such, in such an unequal country if the energy transition is largely left to the private sector or the market, then the benefits are likely to be concentrated in the hands of corporations and the wealthy—those who already have access to wealth, land, and capital. Meanwhile, the majority of South Africans who face a cost-of-living crisis, piled on top of already widespread poverty and unemployment, could be largely excluded from the benefits and ownership of renewables.

This also has major implications for energy poverty and access. While the private sector is making a dash for cheaper renewable energy, Eskom, which provides energy for the Black, working-class majority, is being run into a state of disrepair, with skyrocketing energy tariffs, crumbling generation infrastructure, and unreliable electricity, plunging the country into regular rolling blackouts. The result has been an increase in energy poverty, with nearly half of South Africans now considered energy poor.³⁸ Such widespread energy poverty can hardly be called a just transition.

It is in large part to deliver both energy and climate justice that a central campaign of South Africa's Climate Justice Coalition is for a Green New Eskom to drive 'a rapid and just transition to a more socially owned, renewable energy powered economy, providing clean, safe, and affordable energy for all, with no worker and community left behind in the transition'.³⁹ Other civil society formations, such as the Alternative Information and Development Centre and the South African Federation of Trade Unions, are calling to halt the unbundling of Eskom, and for it to be turned back into a truly public entity with a mandate to serve the public good, including delivering on climate and energy justice.⁴⁰

What is clear is that if South Africa is to deliver a transition to renewable energy that is truly just, then it

cannot simply be left up to the dictates of the market. Rather, energy must be reclaimed as a public good and be invested in accordingly. Given the current unprecedented liberalization of the energy sector underway, and the historic weakness of the left and progressive forces in South Africa, this poses both a major challenge and an opportunity. Private sector forces have successfully exploited the energy crisis to drive a widespread liberalization of the energy sector. Whether progressive forces can respond and use this crisis as an inflection point to successfully rebuild and rally for a more just energy future, remains to be seen.

38. Yuxiang Ye, Steven Koch, "Measuring energy poverty in South Africa based on household required energy consumption," *Energy Economics*, August 2021, <https://repository.up.ac.za/handle/2263/85019>.

39. 350 Africa, "Green New Eskom," 350.org, 2024, <https://350africa.org/greenneweskom/>.

40. The Eskom Research Reference Group, "Eskom Transformed: Achieving a Just Energy Transition for South Africa," *Alternative Information & Development Centre (AIDC)*, 2020, <https://aidc.org.za/eskom-transformed-full-report/>.



United Kingdom



GBE

United Kingdom: Derisking to Death

By Chris Hayes and Melanie Brusseler

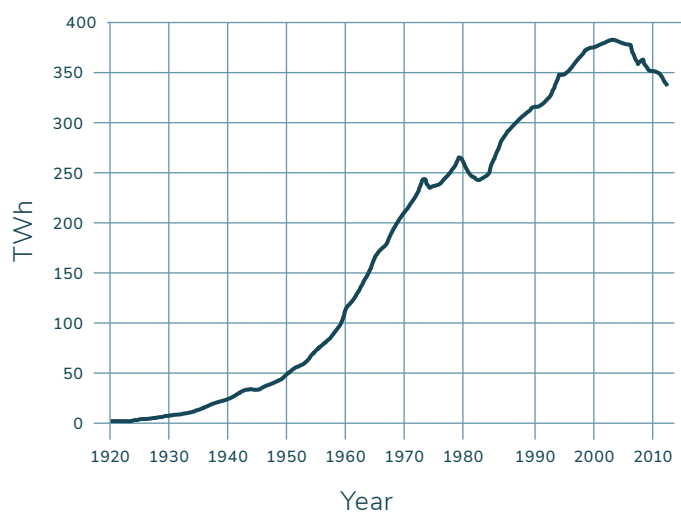
The UK started with a publicly run, vertically integrated energy system. However, in the 1990's Thatcherism took its toll on the energy system. By the early 2000's, the UK had one of the most heavily marketized energy systems in the world. The fractured system has proven its limits in the era of the climate crisis. The wholesale electricity market has failed to explode the amount of renewables on the grid. In fact, the UK has had to use a heavy governmental hand in order to spur renewables and keep them interesting to the private sector. As the imperative to decarbonize and ensure resilience becomes more dire, transformation of ownership—from its current privatization and marketization towards systemic public ownership—is necessary to meet the needs of an effective and just transition. Shifting back to a publicly owned, vertically integrated Great British Energy could help create the stability needed to ensure renewables deployment, even amongst ever-increasing turbulence.

A brief history of UK power system ownership structures

Although electricity production and consumption at a meaningful scale began in the UK at the close of the 19th century, the postwar political economy of reconstruction and national developmentalism brought about the large-scale buildout of the power system and the inauguration of mass household and business consumption of electricity through public ownership and vertical integration. The post-war Labour government implemented a suite of legislations that nationalized vital industrial infrastructure including domestic coal mining, gas, and electricity supply—all of which had been de facto temporarily nationalized and centralized during World War II. The Electricity Act 1947 nationalized the electricity supply system by creating the British Electricity Authority—(later the Central Electricity Generating Board) which owned and operated all generation assets and transmission

assets—and 14 regional electricity boards which were mandated to purchase electricity from the BEA and distribute it to household and business consumers within their regions. This socialized and vertically integrated ownership structure was designed to address the issues of fragmentation, inefficiency, and complexity of the previous structure characterized by systemic private and decentralized ownership. Under this centralized and socialized ownership regime, production and consumption of electricity dramatically expanded (see Figure 1) through a coordinated big push investment program that saw the creation of a national electricity system.

Figure 1: Electricity supplied (net) 1948 to 2008



Source: [DUKES 60th Anniversary](#) (via [Wikipedia](#))

This ownership architecture was revolutionized by the privatization and vertical and horizontal disintegration brought about by the 1989 Electricity Act. The Electricity Act of 1989 paved the way for privatization,

and in 1990 the assets of the Central Electricity Generating Board (CEGB) were broken up into 3 new companies: Powergen, National Power, and National Grid Company, which were floated on the stock market. During the 1990s and early 2000s this centralized, integrated system evolved into the fully privatized and fragmented system we have today, which consists of four separate sub-sectors: (a) generators compete to sell electricity in wholesale markets to (b) customer-facing retail suppliers, physically mediated by regulated private monopolies in (c) transmission and (d) distribution. Crucially, through vertical disintegration and marketization, this system was purposely structured such that system-wide investment, operations of assets, and interactions between actors is organized through markets around the profit imperative and ostensibly guided by price signals. At the heart of this system is a wholesale electricity market, which ensures the real-time supply of power to the UK's consumers on a second-by-second, 24/7 basis. This market has been through several iterations since privatization, culminating in its present form (since 2005) as the British Electricity Trading Transmission Arrangements (BETTA). BETTA established a single Great British electricity market for England, Wales and Scotland. This radical restructuring of the system was motivated by economic claims that marketization—premised on privatization—would lead to more efficient operation of existing assets ⁴¹ following the relative complete buildout of the system by this previous developmentalist program. And it was motivated by a wider politico-ideological⁴² hegemonic project inaugurated by Margaret Thatcher, which sought to build pro-capitalist political constituencies by broadening share ownership among the public, which privatization of public assets

41. Richard Schmalensee, "Strengths and weaknesses of traditional arrangements for electricity supply," Jean-Michel Glachant, Paul L. Joskow, Michael G. Pollitt (eds.) *Handbook on Electricity Markets*, Edward Elgar, 2021, 18.

42. "Privatisation... was fundamental to improving Britain's economic performance. But for me it was also far more than that: it was one of the central means of reversing the corrosive and corrupting effects of socialism... [J]ust as nationalisation was at the heart of the collectivist programme by which Labour Governments sought to remodel British society, so privatisation is at the centre of any programme of reclaiming territory of freedom... [W]hatever arguments there may- and should- be about means of sale, the competitive structures or the regulatory frameworks adopted in different cases, this fundamental purpose of privatisation must not be overlooked... [I]f it was choice between having the ideal circumstances for privatisation, which might take years to achieve, and going for sale within politically determined timescale, the second was preferable option." *Thatcher: The Downing Street Years*. BBC, 1993, <https://www.bbc.co.uk/programmes/b039467f/episodes/guide>.

furnished opportunity to effectuate.⁴³

The current generation mix is led by gas and wind (wind now accounts for about 30 percent). Given its ample natural endowment, the UK has leaned heavily into offshore wind, partly to make up for serious shortcomings in onshore development, whose fate was sealed in 2015 by the Cameron Government's de facto ban in England and Wales. The UK has the second highest offshore wind capacity in the world, after China and Denmark, in absolute and per capita terms. About 45 percent of offshore capacity is owned by foreign state owned enterprises (SOE), with foreign government stakes in those SOEs amounting to around 30 percent.⁴⁴

A system under strain and unable to transform for climate safety

This systemic architecture is ill-equipped to deliver decarbonization, resilience, or justice, precisely due to this privatization and fracturing of ownership, which limits investment decision-making and structurally produces volatility. Both structural volatility and the insufficiency of the current renewable investment regime in the UK were exposed by the recent energy crisis catalyzed by COVID-19 and the Russia-Ukraine war. In response to both issues, we see increased state intervention, which raises the question of the structural utility of privatization and decentralization.

Despite the relative increase in renewable capacity—above all in wind, which together now provide roughly a third of electricity supply—and stark decline of coal generation, the UK is still not on track to meet its power sector decarbonization targets, with its renewable investment regime under acute stress in the face of changing macrofinancial conditions and has moreover suffered an energy crisis in recent years: both issues

stem from the system's inherent malcoordination. A revolving package of institutional fixes, from price caps to minimum guaranteed compensation, has been devised to address the problems thrown up by vertical disintegration, horizontal fragmentation, and privatization.

Volatility Wholesale Generation markets

Short term volatility during the recent energy crisis was at first glance tied to only one feature of the electricity system's market design. Since 2014 these wholesale markets have followed a pay-as-clear model, whereby half-hourly spot prices are determined by the most expensive source needed to satisfy 100 percent of demand at that moment, and then applied universally.⁴⁵ With gas accounting for roughly 40 percent of electricity generation, this system amplified the shock emanating from the Ukraine invasion by applying its exorbitant cost uniformly to all spot-trade electricity, exaggerating real resource constraints. As Common Wealth research has shown, the marginal pricing system exaggerated the extent to which the gas shock had in aggregate 'made us poorer'.

The current system of pay-as-clear marginal pricing in wholesale markets addresses a challenge that wouldn't exist under systemic public ownership of generation assets: the need to coordinate the pricing behavior of various for-profit generators. Public ownership could have effectively decoupled the wholesale price of non-gas electricity from gas prices, preventing a widespread energy shock. Our analysis in March 2023 indicated that pricing non-gas electricity at average cost within a public ownership framework—using pricing flexibility not feasible under market coordination—could have slashed average 2022 wholesale electricity prices by almost 40 percent, amounting to

43. National Audit Office, "The Sale of the Twelve Regional Electricity Companies (HC 10)", UK Government, 1992, <https://www.nao.org.uk/reports/the-sale-of-the-twelve-regional-electricity-companies-2/>.

44. Mathew Laurence, "Power to the People: The Case for a Publicly Owned Generation Company," *Common Wealth*, 2022, <https://www.common-wealth.org/publications/power-to-the-people-the-case-for-a-publicly-owned-generation-company>.

45. Department for Business, Energy, and Industrial Strategy, "Capacity Market: Five-year Review (2014 – 2019)," UK Government, 2019, <https://assets.publishing.service.gov.uk/media/5d35dfdb40f0b604df1f83c4/cm-five-year-review-report.pdf>.

nearly USD\$26 billion or USD\$930 per household. Under such a setup, the impact of gas price fluctuations would have been contained to the gas sector, sparing consumers from an overarching energy crisis.

In 2016, the UK had to introduce price controls into the retail sector with a price cap. Individual households generally didn't switch retail energy providers even with price increases because customers had few options and didn't have the time or energy to switch. This meant that the retail providers didn't get the discipline that the competitive market was expected to create—meaning that consumers weren't protected from radically changing energy prices.⁴⁶

Transmission and Distribution and the Regulated Asset Base Model

Transmission and distribution assets are natural monopolies requiring strict regulation to prevent otherwise limitless predation upon consumers. The regime developed by the UK has been the Regulated Asset Base model, essentially a forecasted price control regime that targets not the price of the service itself, but rather caps the rate of return that providers are allowed to earn on their investment, while operating costs can be recovered (without an additional return) on a pay-as-you-go basis. This requires the regulator to define the “asset base” (the value of the underlying investment on which the return is being made), and to determine the acceptable return rate.

This manages to encourage quantity of investment but—in the face of endemic informational asymmetries vis-à-vis the regulator with whom investment plans may need to be negotiated—does so at the expense of quality, in addition to creating obvious incentives for network managers to classify operating expenditures as capital expenditure warranting a return.⁴⁷ National Grid Electricity Transmission plc paid dividends over the last decade equal to 13 percent of revenues, and 40 percent of (gross) capital expenditure despite equity comprising only 25 percent of their capital stack.⁴⁸

Meanwhile the regulator's use of a WACC (weighted average cost of capital between debt and equity) to benchmark the maximum rate of return incentivizes network operators to leverage themselves, exploiting the much lower cost of debt relative to equity, and “extracting the upside through special dividends, buy-backs and inflated profits”.⁴⁹ An upshot has been that distribution networks have under-invested in the maintenance of already existing lines leading to electricity leakage,⁵⁰ tree-felling failures that contributed to a major network failure during Storm Arwen,⁵¹ and major issues in providing interconnection for new renewable energy capacity. Competition has been introduced to network infrastructure in offshore transmission in an attempt to sideline National Grid by promoting to private offshore transmission developers. The upshot of this has been a series of individual transmission links to the shore—each with separate respective transformer sites—rather than a coherent,

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46. “Hit that switch: UK energy suppliers will get competitive again,” *The Guardian*, <https://www.theguardian.com/money/2023/feb/20/hit-that-switch-uk-energy-suppliers-competitive-prices>.
 47. Dejan Makovšek and Daniel Veryard, 2016, OECD *International Transport Forum* discussion paper, “The Regulatory Asset Base and Project Finance Models: An Analysis of Incentives for Efficiency”.
 48. Common Wealth, “Grid is Good: The Case for Public Ownership of Transmission and Distribution,” *Common Wealth*, 2023, <https://www.common-wealth.org/publications/grid-is-good-the-case-for-public-ownership-of-transmission-and-distribution#top>.
 49. Dieter Helm, “Energy network regulation failures and net zero,” *Dieter Helm.co.uk*, 2023, <https://dieterhelm.co.uk/regulation-utilities-infrastructure/regulation/energy-network-regulation-failures-and-net-zero/>.
 50. Energy and Climate Change Select Committee, “Losses and Leakages,” *UK Government*, 2014, <https://publications.parliament.uk/pa/cm201415/cmselect/cmenergy/386/386o7.html>; Gill Plimmer, “UK electricity monopolies under scrutiny over network investment,” *Financial Times*, 2022, <https://www.ft.com/content/4dbce4a9-24c4-481e-b803-e0a4a34c21cb>.
 51. Dieter Helm, “Energy network regulation failures and net zero,” *Dieter Helm.co.uk*, 2023, <https://dieterhelm.co.uk/regulation-utilities-infrastructure/regulation/energy-network-regulation-failures-and-net-zero/>.

efficient network.⁵²

A rational macroeconomic strategy going forward must prioritize the cheap and stable provision of energy. This means when exogenous risks enter the system, (a) the system of organizing prices and production should not add to those risks, and (b) the risk-bearing and risk-pooling capacity of the state should be employed to absorb some portion of those risks within reason. Public ownership of generation capacity can institutionalize these priorities in ways that market coordination cannot, for fear of capital strike, market exit, and general inaction.

Increasing “green” hand of the state

Privatization and fragmentation of the electricity system also hinders decarbonization of the power system, as the project of decarbonization is structurally reliant on the price mechanism and profit imperative to coordinate investment of a bunch of private actors among and across generation, transmission, and distribution. This structural reliance on private investment leaves the necessary system-wide transformation vulnerable to private uncoordinated decision-making based on project-level profitability, where profitability may be quite challenging for renewables.

Renewables struggle in wholesale markets such as the UK’s because they require big upfront investment but are vulnerable to changing prices which can spook investors most interested in gaining a return. Some call this the ‘revenue cannibalisation effect’, whereby periods of high renewable output produce very low marginal prices for variable renewable electricity—especially when coupled with low demand—causing extremely low or negative market prices. To overcome this, investment in for-profit utility-scale renewable generation relies on state subsidies that provide a guaranteed (usually above-market) price or otherwise use public funds to create stability. The state has been essential at every turn to facilitating the construction of the UK’s existing renewable generation capacity by

backstopping and derisking private investment, while abstaining from direct investment and undertaking the work itself. It is an attractive arrangement for private capital but not for the public: the state provides attractive and stable financial returns while disowning the public planning responsibility.

However, this derisking regime has proven quite fragile in the face of economic and financial turbulence. Offshore wind in particular has hit the rocks recently in the face of the rising costs of both capital and material inputs. The UK also failed to secure bids for new offshore wind in 2023 and for-profit developers walked away from several projects because they weren’t going to be profitable enough, even with the subsidy. The recent failure points to fundamental tensions and flaws in the systemic architecture of the UK’s derisking strategy and the broader structural reliance on private investment that aren’t easily reconciled by higher subsidies for projects or reform to the bidding process. The realities of the climate crisis require stable investments in crucial new renewable energy capacity, even amidst moments of financial and economic turbulence. Thus, the failure of the UK system exposes the difficulty of requiring the buildout of renewable energy to be dictated not merely by profitability, nor even projected profitability, but by isolated project-level profitability, in contrast to system-level need.

A public clean-generation enterprise such as Labour’s proposed Great British Energy, which can not only directly undertake investments in and the operation of generation capacity but is also charged as the ultimate delivery vehicle of renewable generation investment, must be chartered to play a systemic role in the transformation of the power sector. Public enterprises face no mandate to pay dividends and benefit from a structurally lower cost of capital—a cost to which renewables projects in particular are acutely sensitive—and do not stipulate subjective hurdle rates in excess even of these costs as a condition for going ahead with socially needed investments. National intervention is crucial—fed up with the realities of a failing private

52. Dieter Helm, “Energy network regulation failures and net zero,” Dieter Helm.co.uk, 2023, <https://dieterhelm.co.uk/regulation-utilities-infrastructure/regulation/energy-network-regulation-failures-and-net-zero/>.

infrastructure, municipalities took up the charge of socializing energy via entities like Robin Hood Energy in the mid-2010s but were confronted with the problem of operating in a highly privatized and fragmented system.⁵³ A nationally run publicly owned energy company would more rapidly and decisively invest in renewable generation while delivering lower costs at both project and system-wide levels. Critically, a public enterprise can take a systems-oriented approach to investment and a macroeconomic resilience approach to the operations and provisioning of electricity.

downstream of capital infrastructure. Due to recent structural volatility and decarbonization imperative, it is time to rethink ownership again.

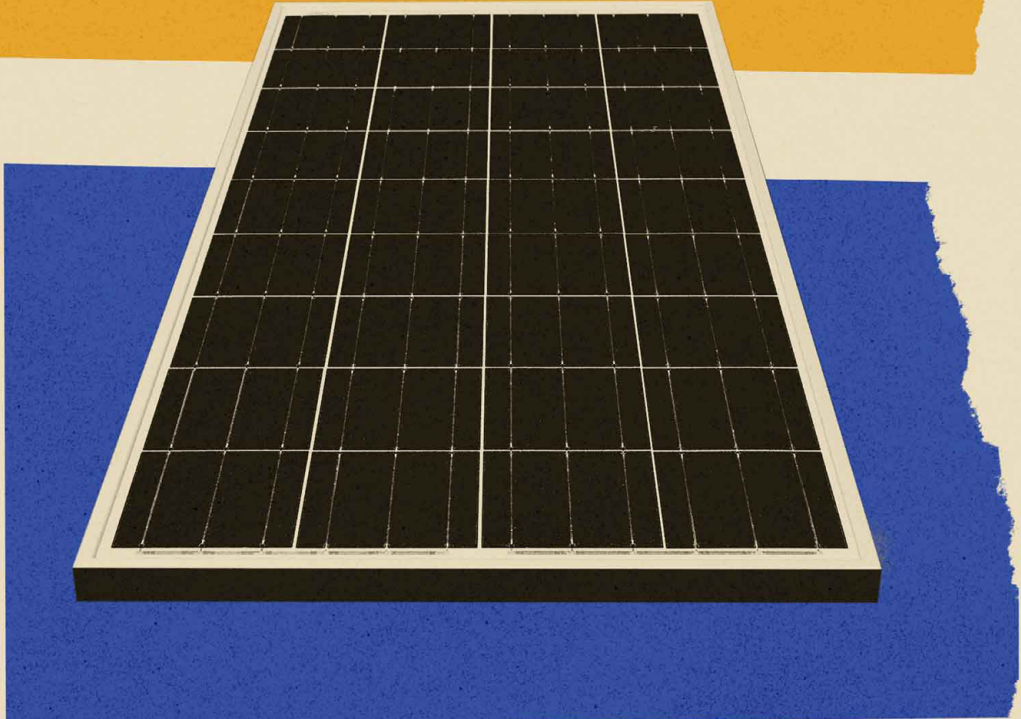
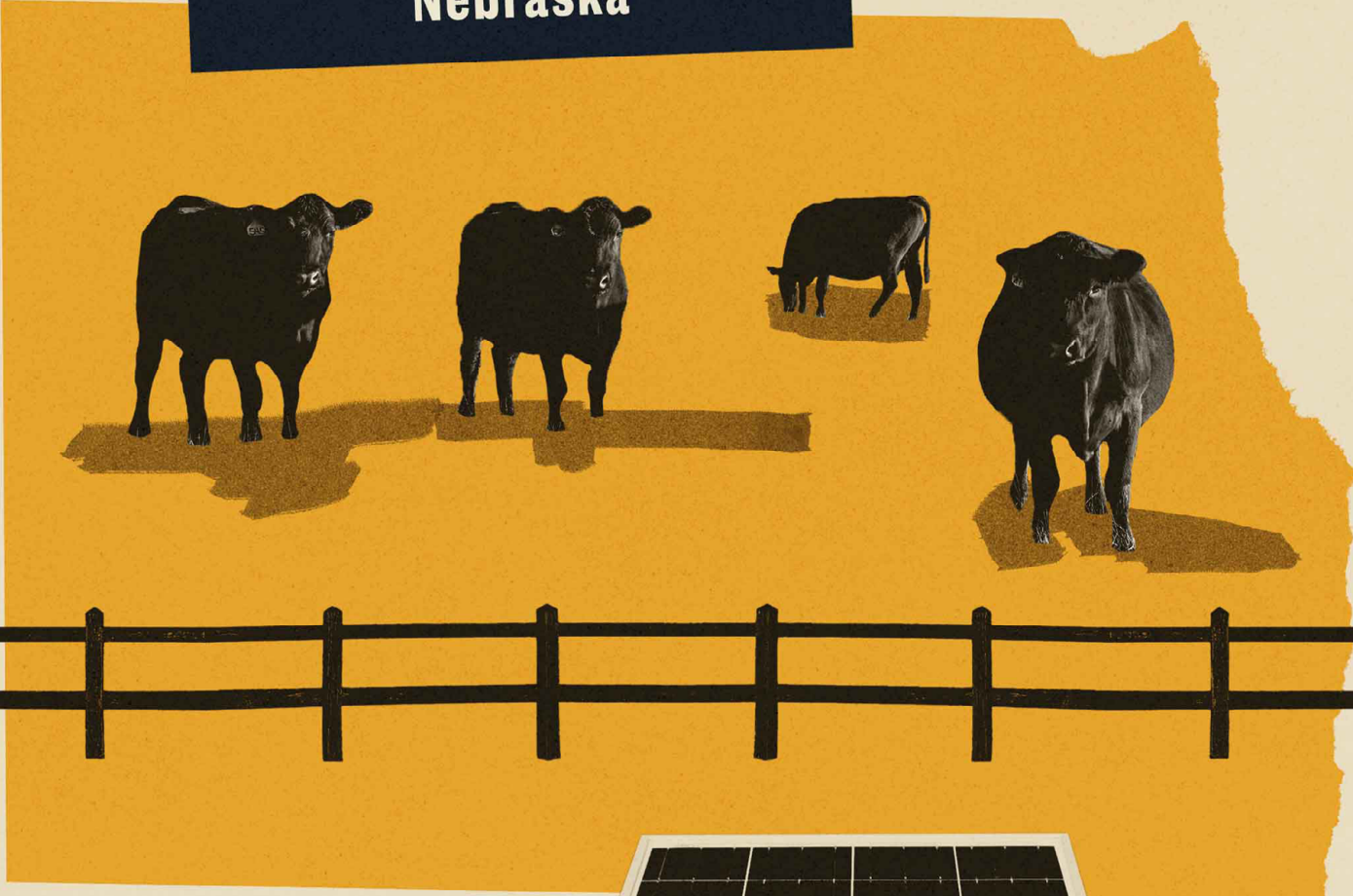
Potential for Ownership Change?

More than 3 decades on from the privatization and fragmentation of the UK power system ownership structure, socialization and centralization offer structural solutions to the ineffective market plus derisking strategy. The idiosyncrasies and dependencies inherent to the energy transition—along with the pace and scale of buildout required—have placed a huge premium on the need for system coherence.

Policymakers have already grasped this principle in part, but have yet to follow the logic through. The UK has built a set of subsidy strategies that show that they recognize the failure of the price to drive renewables investment. But their solution has been to exercise greater state influence over that mechanism, persisting in their faith that a corrected price can still efficiently and reliably coordinate the desired activity on the part of asset owners and other private actors. They also recognize that a liberalized, bottom up approach just will not work for the transition. Yet with only the power to design the investment framework and never to enact it, this is akin to a symphony composer in the absence of a conductor, or an architect in the absence of any builders. Until the energy crisis of 2021-23, political contestation over the UK electricity sector had focused overwhelmingly on the consumer-facing retail end, far

53. Old Sparky, “Analysis: How £35 million of public money was ‘lost’ to Bristol Energy,” *The Bristol Cable*, 2020, <https://thebristolcable.org/2020/05/analysis-how-35-million-of-public-money-was-lost-to-bristol-energy/>.

Nebraska



Nebraska (United States): New Deal to the Art of the Deal

By Johanna Bozuwa

The state of Nebraska stands out in the United States' energy landscape—there are no for-profit utilities operating poles and wires. The energy landscape is heavily localized with 166 municipal electric systems, public power districts, irrigation districts, and cooperatives together supplying all Nebraska's customers with their electricity.⁵⁴ These utilities have high reliability and affordability records, but lower scores on sustainability.⁵⁵ Nebraska became a fully public power state in 1946, largely catalyzed by New Deal era programs and while Nebraska continues to hold pride in its public power energy system, national energy trends of deregulation as well as larger economic trends of neoliberalization have affected the structure of the public utilities' organization and operations.⁵⁶ While federal structural incentives for renewables have

heavily favored private ownership, the recent Inflation Reduction Act (IRA) opened up new possibilities for public ownership of renewables, but the example of Nebraska again demonstrates that questions of electricity ownership regimes can quickly become questions of political willpower, not rational policy, and reinforce the importance of democratic decision-making both as an instrument of effective policy and as a bulwark to ensure buy-in and continuity for good policy.

The Emergence of Public Power State

Nebraska was not always a public power dominated state. At the outset, Nebraska had a range of ownership structures operating with private companies providing electricity to some of the larger cities, while

54. Nebraska Power Association. (n.d.). Public Power - How Nebraskans Benefit.

55. American Public Power Association, "Stats and Facts," Publicpower.org, 2024, <https://www.publicpower.org/public-power/stats-and-facts>.

56. Johanna Bozuwa, "Energy democracy: taking back power," *The Next System Project*, 2019, <https://thenextsystem.org/learn/stories/energy-democracy-taking-back-power>.

other regions (that had often already started their own irrigation districts for farming) created their own municipal utilities—others, often rural, stayed in the dark without access to electricity altogether. Private utilities' exorbitant rates led to customer distrust and distaste, catalyzing a movement for public and municipal ownership in Nebraska but also across the country.⁵⁷ For instance, the city of Omaha provided a franchise to a private company to provide light and power to the city in 1885; the company was ultimately bought by one of the large holding companies, General Electric Company and was the last private utility standing before it was bought out and transferred into the Omaha Public Power District in 1946.⁵⁸

Nebraska's Senator George Norris became a champion for public power at the federal level, not only unleashing public power utilities in Nebraska but across the country. Sen. Norris supported the development of the Resource Finance Corporation in 1932, which provided critical enabling financing for municipalities across the state to create their own utilities.⁵⁹ In 1933, Nebraska further unleashed public power by allowing communities who could provide petitions with 15 percent of local voters' signatures to the Nebraska Department of Roads and Irrigation the entitlement to start their own power district.⁶⁰ As part of the New Deal suite of investment and regulation, Sen. Norris also devised the Rural Electrification Administration that allowed rural regions of Nebraska (and all over the country) to assemble their own electric cooperatives; supported

the The Public Utility Holding Company Act of 1935 that regulated, broke up, and weakened private utilities and helped transfer some investor-owned utilities into public hands; and Congress helped created the Tennessee Valley Authority as a model for low cost, planned energy investment (Tennessee is the only other state close to full public ownership).⁶¹ Over the course of 15 years from 1930 to 1945, these enabling structures and high-visibility projects helped fully erase private power from Nebraska.

In comparison to many examples of public energy systems (particularly abroad), Nebraska to this day represents a highly decentralized model of management and planning. Instead of developing one statewide energy provider, the local power districts conduct their own planning, elect or appoint their own board members, and set their own rates.⁶² Nebraska created the Power Review Board to resolve disputes between districts, review proposed generation and transmission, and provide opinions on rate disputes—but this regulatory body does not hold the same level of oversight and decision making power as that of Public Utilities Commissions generally seen across the United States that rely heavily on private utilities.⁶³ While each utility operates differently, they are all not-for-profit entities that redirect a proportion of their earnings not reinvested into the utility to their region via Payments in Lieu of Taxes (PILOTS)—used either to specifically fund certain programming or contributed to the general fund of the municipality or region.

57. Frank Gallant, "Flashbacks: How Nebraska Ran the Private Power Companies Out," *Rural Electric Magazine*, 2020, <https://www.cooperative.com/remagazine/articles/Pages/Flashbacks-How-Nebraska-Ran-the-Private-Power-Companies-Out.aspx>.

58. William F. Kennedy, "The Nebraska Public Power Districts," *The Journal of Land & Public Utility Economics* 15, no. 1 (1939): 29–48. <https://doi.org/10.2307/3158271>.

59. "Nebraska Public Power District," *International Directory of Company Histories*, 2024, <https://www.encyclopedia.com/books/politics-and-business-magazines/nebraska-public-power-district>.

60. CITATION NEEDED HERE

61. Gene A. Budig, Don Walton, George Norris, *Going Home: Reflections of a Progressive Statesman*, Lincoln and London: University of Nebraska Press, 2013). By Gene A. Budig, Don Walton https://books.google.com/books?id=xQ6RAAAQBAJ&dq=george+norris+public+power&lr=&source=gbs_navlinks_s.

62. William F. Kennedy, "The Nebraska Public Power Districts," *The Journal of Land & Public Utility Economics* 15, no. 1 (1939): 29–48. <https://doi.org/10.2307/3158271>. <https://www.jstor.org/stable/3158271>.

63. Environmental Protection Agency, "State Climate and Energy Technical Forum Background Document: An Overview of PUCs for State Environment and Energy Officials," US Government, 2010, https://www.epa.gov/sites/default/files/2016-03/documents/background_paper.pdf.

The fact that each utility district manages its governance differently means that there is a range of accountability and transparency within the districts, but overall Nebraska utilities have set a high value on their local accountability and have fought to keep it intact.⁶⁴ The models overall do not reflect some of the more progressive democratic governance infrastructure, like multi-stakeholder boards or deliberative polling.⁶⁵ In my research of the Omaha Public Power District, I found that the utility had higher democratic processes than the private utilities, but that community groups still questioned the level of access and transparency.⁶⁶ As austerity and corporatization of public institutions has continued, Nebraska institutions have not been immune. Management approaches within some utilities have directed toward more traditional business mindsets of for-profit businesses, rather than public institutions run in the public interest.⁶⁷

Nebraska utilities have consistently provided low cost rates to its customers.⁶⁸ Over time, the utilities have coordinated their investments. In 1970, the 3 largest power districts, Consumers Public Power District, Platte Valley Public Power and Irrigation District, and

Nebraska Public Power System merged to provide wholesale energy and a range of services to power districts across the state to increase efficiency so that each municipality didn't have to build their own dam or energy plant.⁶⁹ In the 1990s and 2000s, the United States went through a piecemeal energy market transformation.⁷⁰ Historically, utilities operated as vertically integrated monopolies including Nebraska, largely owning and building their own generation, transmission, and distribution. As part of a larger trend of neoliberalization and competitive market infrastructure, energy regulators and power brokers built new energy generation markets to “create competition” and “lower costs.”⁷¹ The extent to which utilities engaged in these markets ranged—either by law or by utility preference—from solely wholesale market development to retail choice (in which retail customers can “choose” their energy supplier generation provider). Some states required utility companies to “unbundle,” meaning that they had to sell off their generation assets and solely own and operate the poles and wires.⁷² Deregulation has largely not delivered on its goals of cheaper electricity, with some studies finding that the markets increased the cost of energy⁷³ as well

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64. Paul Hammel, “Utilities decry proposal to appoint, rather than elect, board members,” *Nebraska Examiner*, 2022, <https://nebraskaexaminer.com/2022/01/27/utilities-decry-proposal-to-appoint-rather-than-elect-board-members/>.
 65. Shahrzad Shams, Johanna Bozuwa, Isabel Estevez, Carla Santos Skandier and Patrick Bigger, “Lessons from Abroad: What US Policymakers Can Learn from International Examples of Democratic Governance,” *Roosevelt Institute*, 2023, <https://rooseveltinstitute.org/publications/lessons-from-abroad/>.
 66. Johanna Bozuwa, “Energy democracy: taking back power,” *The Next System Project*, 2019, <https://thenextsystem.org/learn/stories/energy-democracy-taking-back-power>. <https://thenextsystem.org/learn/stories/energy-democracy-taking-back-power>.
 67. Thomas Hanna, Johanna Bozuwa, and Raj Rao, “The Power of Community Utilities: Publicly owned and cooperative electric utilities as anchors for community wealth building and a just energy transition,” *Climate and Community Project and the Democracy Collaborative*, 2022, <https://www.climateandcommunity.org/power-of-community-utilities>.
 68. Robert Zullo, “Affordable, reliable and sustainable: report compares utility performance,” *Nebraska Examiner*, 2023, <https://nebraskaexaminer.com/2023/01/19/affordable-reliable-and-sustainable-report-compares-utility-performance/>.
 69. Nebraska Public Power District, “Our Customers,” *Nebraska Public Power District*, 2024, <https://www.nppd.com/about-us/our-customers>; Keisha Patent, “Public Power in Nebraska: A Legislative Research Office Backgrounder,” *Nebraska Legislature*, 2018, https://nebraskalegislature.gov/pdf/reports/research/public_power_2018.pdf.
 70. Jeff Lien, “Electricity Restructuring : What Has Worked, What Has Not, And What Is Next,” *Antitrust Division, US Department of Justice*, 2008, <https://www.justice.gov/atr/electricity-restructuring-what-has-worked-what-has-not-and-what-next>.
 71. Kathryn Cleary and Karen Palmer, “US Electricity Markets 101,” *Resources for the Future*, 2020, <https://www.rff.org/publications/explainers/us-electricity-markets-101/>.
 72. Environmental Protection Agency, “Power Market Structure,” *US Government*, 2024, <https://www.epa.gov/green-power-markets/power-market-structure>.
 73. Alexander McKay and Ignacia Mercadal, “Deregulation, Market Power, and Prices: Evidence from the Electricity Sector,” *MIT Climate Portal*, 2022, <https://climate.mit.edu/posts/deregulation-market-power-and-prices-evidence-electricity-sector>.

as increased energy volatility—most notably in the California Enron scandal, but more recently in the Texas Winter Storm Uri.⁷⁴

Nebraska did not unbundle their energy system, but in 2008, 3 major energy developers in Nebraska who provide generation to many smaller power districts—Nebraska Public Power District, Omaha Public Power District and Lincoln Electric System—joined the wholesale market Southwest Power Pool (SPP).⁷⁵ In a description by the city of Beatrice, NE, the municipality's General Manager describes, "As entities such as NPPD and WAPA joined SPP they no longer sell the electricity they generate directly to a customer such as the City of Beatrice." Instead, the sale is routed via the Southwest Power Pool, "[...] NPPD and WAPA are selling their electricity to SPP and then customers, like the City of Beatrice, are buying electricity with SPP. In a broad sense, all of your electricity comes from SPP. That is why it is difficult to say exactly where our electricity comes from."⁷⁶ Nebraska's entrance into the SPP allowed Nebraska utilities to sell excess energy to a larger geography beyond their state, as well as fill holes in their own energy portfolio without directly building the assets themselves. This has some positive impacts, like access to energy in times when energy production in Nebraska is low,⁷⁷ but as the Beatrice General Manager describes, it creates distance from the generation asset to the end user and increases the amount of private generation integrated into the public power districts' energy portfolios. Furthermore, it has

also been a reason that the publicly owned utility districts either have to keep old fossil fuel plants running, or even build new ones. The SPP has reserve capacity requirements that do not favor green energy. Basically SPP requires a certain percent of excess capacity to handle peak energy needs, but discounts renewables in their ability to provide that excess.⁷⁸ The structure of the deregulated market, in which the publicly owned utilities find themselves within, is limiting their ability to make decisions to invest in the green transition.

The Energy Transition and Privatization

The transition to renewables has further increased the amount of private generation supporting public power in the state due to the way that federal incentives have been structured. The strongest form of federal incentives for renewables are the Investment Tax Credit (ITC) and the Production Tax Credit (PTC) that provide a 26-30 percent tax credit on the solar and wind assets. However, until very recently, these tax credits were inaccessible to nonprofits or public institutions who do not pay federal taxes (or even for-profit projects that have not yet generated income). This has had two effects—first, it has created a major backdoor subsidy for Wall Street and big energy companies who pay enough in taxes and create "tax equity partnerships," complex and costly deals where project developers go to the banks or big energy companies and "sell" their

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74. Joseph M. Schwartz, "Democracy Against the Free Market: The Enron Crisis and the Politics of Global Deregulation," *Conn. L. Rev.* 35 (2002): 1097, <https://heinonline.org/HOL/LandingPage?handle=hein.journals/conlr35&div=32&id=&page=>
 75. Eileen O'Grady, "UPDATE 1-Nebraska utilities to join Southwest Power Pool," *Reuters*, 2008, <https://www.reuters.com/article/idUSN09522851/>.
 76. Tobias Tempelmeyer, "Where Does My Electricity Come From?" *Beatrice Nebraska City Government*, 2024, <https://www.beatrice.ne.gov/city-administrator/page/where-does-my-electricity-come>.
 77. Julie Anderson, "OPPD customers helped conserve when cold temporarily shuttered coal plants," *Omaha World Herald*, 2024, https://omaha.com/news/local/weather/oppd-customers-helped-conserve-when-cold-temporarily-shuttered-coal-plants/article_96143c6c-b48f-11ee-ae47-fbe103f57fb5.html; Omaha Public Power District Board of Directors, "Winter Storm Gerri Update in Agenda: OPPD Board of Directors – All Committees Meeting," *Omaha Public Power Board of Directors*, 2024, pg 127 / 136, 2024 Winter Storm Gerri Update <https://oppd.com/media/319583/2024-1-jan-committees-package.pdf>.
 78. Kathryn McGrath and Lee Ziesche, "Southwest Power Pool Again Proposes Discriminatory Renewable Energy Accreditation," *EarthJustice*, 2024, <https://earthjustice.org/press/2024/southwest-power-pool-again-proposes-discriminatory-renewable-energy-accreditation>.

tax break in return for financing the project.⁷⁹ Second, in the case of public institutions like public power districts in Nebraska, the clearest way to integrate renewables into their portfolio is by entering into PPAs or buying renewable energy from the Southwest Power Pool. Ultimately, this has led to the fact that Nebraska utilities are not planning, developing, and financing significant amounts of renewable energy but relying on the private sector to do so for them.⁸⁰ Instead, private energy and utility companies like NextEra Energy and EDF are building wind and solar power in Nebraska, often with poor track records with community engagement and buy-in.⁸¹ Multiple Nebraska utilities including Omaha Public Power District, Lincoln Electric System, and the Nebraska Public Power District have made decarbonization commitments, but a majority of the renewable energy projects to date are reliant upon private energy developers.⁸²

The Inflation Reduction Act passed in 2022, massively expanding decarbonization incentives across the economy. The ITC and PTC were included with new stipulations, and importantly for public power districts like those in Nebraska, included a new “direct” or “elective pay” incentive that allows an alternative to the tax incentive, directly providing the value of the incentive.⁸³ The incentive’s expansion is new and therefore relatively untested in its ability to redirect public institutions

into the renewable energy development business. The change in course hasn’t been fully reflected in all of Nebraska’s utilities evenly. For instance, the Nebraska Public Power District includes new battery storage but no planned renewable energy. In comparison, the Omaha Public Power District invested in a 310 megawatt solar project to support the growing energy needs.⁸⁴ However, the complexities of the new direct pay provision have left publicly owned utilities in an uncertain state—projects which cannot obtain these effective grants are not eligible until they are complete, making financing decisions far more difficult.⁸⁵ While likely a more complex determination, the publicly owned utilities have also been cautious to own the renewable energy assets because of the implications for property taxes—private developers have to pay taxes to the city or county in which they buy land but publicly owned utilities do not.⁸⁶

However, Omaha’s planned solar project unearths another alarming trend in Nebraska, and more generally in rural regions of the US. Private renewable and transmission developers have largely not conducted deep community engagement and have come in from outside Nebraska, creating concern from community members for their property as well as the potential environmental harm on fragile ecosystems.⁸⁷ This, paired with strong right-wing campaigns to malign

79. . Banks are free to say no and often do, particularly to smaller-scale developers and projects. Sarah Knuth, “Rentiers of the Low-Carbon Economy? Renewable Energy’s Extractive Fiscal Geographies,” *Environment and Planning A: Economy and Space* (December 2021), <https://doi.org/10.1177/0308518X211062601>.

80. Johanna Bozuwa, “Energy democracy: taking back power,” The Next System Project, 2019, <https://thenextsystem.org/learn/stories/energy-democracy-taking-back-power>. <https://thenextsystem.org/learn/stories/energy-democracy-taking-back-power>

81. XXXX In discussion with the author/Interview, February 2024.

82. Zoya Teirstein, “In a red-state first, Nebraska plans to decarbonize power sector by mid-century,” *Grist*, 2021, <https://grist.org/energy/in-a-red-state-first-nebraska-plans-to-decarbonize-power-sector-by-mid-century/>.

83. IRS, “Elective pay and transferability frequently asked questions: Elective pay,” US Government, 2024, <https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay>.

84. Omaha Public Power District, “K-Junction Solar,” Omaha Public Power District, 2024, <https://www.oppdcommunityconnect.com/k-junction-solar>.

85. Rosana Francescato, “Two potential IRA direct pay pitfalls nonprofits need to know about,” *Solar Power World*, 2023, <https://www.solarpowerworldonline.com/2023/11/potential-direct-pay-pitfalls-nonprofits-need-to-know-about/>.

86. Omaha Public Power District Board of Directors, “Agenda: OPPD Board of Directors – All Committees Meeting,” Omaha Public Power District, 2024 <https://oppd.com/media/319667/2024-3-mar-committee-package.pdf>.

87. Destiny Herbers, “Power play: Project to move power through Nebraska Sandhills has stalled ... for 12 years,” *Flat Water Free Press*, 2024, <https://flatwaterfreepress.org/power-play-project-to-move-power-through-nebraska-sandhills-has-stalled-for-12-years/>.

renewables, has created a hostile environment for renewable energy—creating new pressures for the power districts to achieve their decarbonization goals. Nebraska has 6 counties that have set up arcane zoning regulations forcing out renewable energy and transmission deployment.⁸⁸ Omaha's large solar investment sits within one of these counties, putting the project in peril of closing if new agreements cannot be reached.

Nebraska's energy future is at a crossroads—will it continue on a path of private renewable developers, slowed by hotly contested zoning laws and opposition from local communities? Or will it follow the inspiration of its once-Sen. Norris and invest in a future built for the public, by the public? Public renewable energy development could be a way to increase project viability due to the strong local relationships that public power districts hold with a commitment to the public good. Through community planning and coordination, the power districts across the state could support a collective goal of low-impact renewable infrastructure for swift decarbonization unlikely to be facilitated by out-of-town energy developers. The new incentives set by the IRA offer an opportunity, will Nebraska seize it?

88. Nancy Gaarder, "Public safety, economic opportunity, China: Renewable energy debate runs hot in Nebraska" *Flat Water Free Press*, 2024, <https://flatwaterfreepress.org/public-safety-economic-opportunity-china-renewable-energy-debate-runs-hot-in-nebraska/>; Julie Anderson, "OPPD seeks compromise with York County over proposed solar farm near McCool Junction," *Omaha World Herald*, 2024, https://omaha.com/news/local/business/development/oppd-seeks-compromise-with-york-county-over-proposed-solar-farm-near-mccool-junction/article_1f36f4ca-f5f5-11ee-b7f3-2b3375134691.html.



France



The French Power System: Impasse and Opportunity

By Patrick Robbins and Anne Debregeas

The French are known for their public planning. In the postwar period, Électricité de France (EDF), was a beacon of modernization and rebuilding providing high quality jobs and low cost services. In the 1990's, the context around EDF began to change in the European Union (EU), and with it came a more corporate version of the national public utility. The EU progressively liberalized its electricity system, spinning out the different pieces of the sector—generation, supply, distribution, transmission—into discrete markets and entities. This has largely increased costs to consumers and made it far more difficult to do long-term planning. Now in the era of the green transition, France is experiencing the drawbacks of a market-based system to make the overhaul to a green transition—private actors require substantial derisking and subsidies to get new renewable entrants into the

market. EDF could play a much stronger and beneficial role under a more holistic and democratic approach to energy planning overall.

Early History of EDF

As in many developed countries, the massive electrification of post-war France was made possible by a public sector that allowed for long-term investment and planning. Thus, in 1946, in accordance with the program of the Conseil National de la Résistance,⁸⁹ the electricity and gas sectors, then owned by a multitude of private players and local public players, were nationalized and placed under the responsibility of the public monopoly EDF.⁹⁰ From the outset, French decision makers, trade unions, politicians and citizens of different political ideologies agreed to make EDF

89. Composed of various Resistance movements, including Gaullists and Communists.

90. There are, however, a few exceptions to nationalization: very small-scale production and local public corporations.

a symbol and instrument of France's modernization and resurgence as a world power, seeing this public monopoly, guided by the principles of nationalization and planned economy, as a logical step towards rebuilding French prosperity along modernist lines⁹¹. EDF developed and unified the grids, and carried out major generation programs – hydropower, coal and fuel oil, followed by nuclear power, with the first plant at Chinon in 1963. In its early development, it received strategic investment support from the United States; Marshall Plan funds composed 36 percent of EDF investment from 1948 to 1952⁹². By the end of the millennium, the French electricity system boasted the lowest electricity prices in Western Europe, excellent service quality (notably very few power cuts), and equal treatment for all users regardless of where they were located in the system.

Its social model was also very advanced. On June 22, 1946, under the impetus of French Minister Marcel Paul, the National Statute for Personnel in the Electricity and Gas Industries was enshrined in law, and the unions, notably the General Confederation of Labour (CGT), played an active role in the company's management.⁹³ Today, the Chairman of EDF is appointed by the president and confirmed by parliament.

European Liberalization

Starting in 1996, the EU initiated a series of energy policies that liberalized the European energy sector and harmonized electricity exchange across the member states.⁹⁴ This imposed a separation of management between the network activities that remained a monopoly, and the activities that had become competitive, namely generation and energy suppliers.

The directives required France to create two separate

companies: RTE for the transmission network (high voltage) and Enedis for the distribution network (medium and low voltage). Today, RTE is 50 percent owned by EDF and 50 percent by public bodies, while Enedis is a 100 percent subsidiary of EDF. While the EU directive does not require privatization of public enterprises, the process of unbundling creates major opportunities for privatization to occur in the member states and requires that public entities compete with private actors in a market-based system. Dozens of alternative suppliers now compete with EDF in this newfound market. However, often their role is purely commercial and financial—they largely just buy electricity for resale, without any physical intervention. There are some private producers who developed gas-fired, then solar and wind power plants. But today EDF still supplies the lion's share of electricity consumed in France.⁹⁵ At one point, EDF opened itself up to more private ownership internally, by selling 16 percent of its capital to the private sector. However, since 2022, the French state has once again been made into the sole shareholder, in part to derisk the nuclear generation fleet.

Rates on the Rise

As the system became more market based, France has changed its rate system. France founded The Commission de Régulation de l'Énergie (CRE) in 2000 to regulate electricity bills.⁹⁶ As time has gone on, the system has become even more marketized, with rates created via market offers from various suppliers, based on market prices. Regulated rates still exist for the smallest consumers—individuals, small businesses and local authorities. But they are set to disappear. CRE's calculation method changed in 2016 to reflect

91. Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity After World War Two*. (Cambridge: MIT Press, 2009).

92. "The EDF adventure: A Global Electricity Company in the Spotlight," EDF, 2024, <https://www.edf.fr/en/the-edf-group/edf-at-a-glance/history>, accessed November 11 2023.

93. Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity After World War Two* (Cambridge: MIT Press, 2009).

94. Fact Sheets on the European Union, "Internal Energy Market," *European Parliament*, 2024, https://www.europarl.europa.eu/ftu/pdf/en/FTU_2.1.9.pdf.

95. "European energy market reform. Country profile: France," *Deloitte*, 2015, <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/gx-er-merket-reform-france.pdf>

96. Olivier Petitjean, Journalist and Co-Founder of the Multinationals Observatory, in conversation with the author, New York, February 2024.

not EDF's production costs, but the supply costs of alternative suppliers without production facilities, with the aim of making room for competition. The new calculation method is pegged partially to market prices, creating a surge in the regulated sales rates. This forced the government to intervene with a "rate shield" that has capped rate increases at 4 percent in 2022 and 26 percent in 2023. In 2024, a further 10 percent increase was applied, bringing the rise in the regulated sales rate to 46 percent in 3 years.

The French government provided energy vouchers, targeted at low-income households, to provide assistance with dramatically increasing rates. Although French consumers were better protected than in other EU countries, mainly thanks to the rate shield, they nevertheless continued to pay far more than the cost of producing and transporting electricity in France. Consumers who no longer benefit from the regulated sales rate have seen steep increases. The complex subsidies put in place by the government have only cushioned these increases slightly. On the industrial production side, the situation has led to a cascade of bankruptcies and production relocations to countries where electricity is cheaper, notably the US and Canada. Overall, the rising rates are hampering electrification investments needed for decarbonization, particularly in industry, and have greatly fueled inflation.

The rate surges can be attributed in part to the EU regulations, which impose pricing based on wholesale market prices. These market prices are set according to the marginal cost, which only the most expensive power plant operating on the European grid can supply. As this is generally a gas-fired power station, the market price of electricity is highly dependent on the price of gas, despite making up a much smaller portion of the generation mix. This is why the surge in gas prices from spring 2021 onwards, fueled by the post-Covid recovery and then by the war in Ukraine, has dragged electricity prices in its wake. The difficulties experienced by the nuclear fleet in the winter of 2022-2023 further exacerbated this surge. So, while the surge in

gas prices was the spark, it was the liberalization of the electricity sector that led to the surge in electricity prices. If France had maintained regulated sales rates based on the costs of producing and transporting its electricity, the electricity price crisis would have been far less egregious. The consequences of these decisions are acutely felt by the French public, in 2022, 27 percent of respondents to a survey from the National Energy Mediator said that they struggled to pay their electric bill.⁹⁷

EU regional coordination and markets

Historically, France and other countries optimized the operation of their national generating fleet, prioritizing the cheapest plants on their territory, and exchanging with other European countries to secure their supply or export surplus production on a more bilateral level. Now, EU directives impose Europe-wide coordination of the operation of generating facilities: power plants are started up on a European scale, from the cheapest to the most expensive. The EU-wide coordination of generation facilities could have been set up differently and achieved by a EU public coordinator with publicly owned utilities, instead of via a market dominated by private actors. The new arrangement introduced a number of financial intermediaries for suppliers, brokers, traders, and more, leading to a far more complex system that increased costs instead of driving them down.

The market infrastructure has also affected the ability of the EU to achieve its emission reduction and climate targets. To enable renewable entrants into the market, the European Commission approved the Feed-in Tariff in the early 2000s, which guarantees renewable producers a purchase price based on production costs over the entire lifetime of the power plants, thus giving them guarantees on the profitability of their investments. This Feed-in Tariff was crucial to facilitating renewable energy investments and quite useful in achieving

97. Médiateur national de l'énergie, "Dossier: La Précarité Energétique," *Le Gouvernement Français*, 2024, <https://www.energie-mediateur.fr/le-mediateur/dossiers/la-precarite-energetique/> accessed February 26, 2024.

targets. However, financing costs for private renewable projects remain much higher than those of a public investment even with the Feed-in Tariff's derisking—a cost passed onto the consumer. RTE indicates that a financing cost of 7 percent actually doubles the total cost of production. This leakage of public money to private groups undermines the very high level of investment needed for the energy transition.

The liberalized and largely private nature of renewables has also affected the workforce conditions. The historical production sectors that came pre liberalization—hydroelectric, gas and nuclear – developed within the framework of a public sector offering highly protective staff regulations and a focus on training⁹⁸, backed by powerful trade unions. In comparison, the renewables sector is highly fragmented into numerous small companies, employment in this sector is often precarious, working conditions offer little protection, and the unionization rate is very low. This has led to quality problems, particularly in panel installation, which have weakened the industry. Moreover, this situation is not conducive to employee acceptance of the transition to renewable generation. Even within EDF, the renewable activity is placed in subsidiaries in which employees do not benefit from the status of the Electricity and Gas Industries. If EDF could be brought more holistically into democratic public ownership, it could help guarantee that renewable workers benefit from the same standards and conditions that apply to other workers in the sector.

The French electricity system has been progressively undermined by the market and top-down decision making by the EU. Historically, the French energy system had developed through public planning and financed by public investment, coordinated by EDF. However, the gradual arrival of private producers has made its operation and planning much more complex, and led to very high additional costs and volatile, unpredictable and unfair prices. In the era of the green

transition, it is clear that liberalization hasn't delivered universal renewable energy deployment and the investments into renewables has largely benefitted private capital. There is an alternative course where EDF could work with the French government to issue public bonds to buy back existing private renewable generation assets and finance new ones with far lower rates. This strategy would also avoid the very high margins of producers and intermediaries.

The Future of Planning the Transition

Under a more robust program of planning, EDF could be an instrument for clarifying the relationship between local, regional, and international prerogatives for siting renewable energy generation in France, learning from previous attempts to ensure public support and participation. The APER law, passed in France in 2023, aimed to reform and clarify the role of state and local authorities in renewable energy siting, and establish a process for consultation on “acceleration zones” for renewable energy in which municipalities identify and advance priority areas for development in response to national targets. While this has been welcomed by some municipalities, a 1-year assessment found that this plan could benefit from more support for local participation⁹⁹. Furthermore, these laws exist side by side with other regional planning schemes. One can envision a more integrated EDF and could help foster greater coordination between different scales of planning. Under such a vision, local authorities could be put in the position of negotiating compensation or guaranteeing local employment to make projects more interesting and beneficial to the area.¹⁰⁰

It is important to note that nuclear power still reigns in the French generation mix. It accounts for around 70 percent of production. But the fleet is aging—EDF recently estimated the cost of deploying 6 new nuclear plants at USD \$73 billion. France has 2 possible options: either to move towards a 100 percent renewable

98. In recent decades, however, this status has been progressively weakened, and above all, the development of subcontracting has left a large proportion of the sector's employees out in the cold.

99. https://www.assemblee-nationale.fr/dyn/16/rapports/cion-eco/16b2200_rapport-information, accessed May 24, 2024

100. They could, for example, negotiate a discount on bills or improve local public services such as trains, schools and sports facilities.

mix, or to keep a share of nuclear power. In all cases, this choice must be accompanied by a major effort to reduce energy consumption and develop storage resources: batteries, hydroelectric pumping stations, and decarbonated gas. Detailed scenarios with and without nuclear power were presented, notably by French grid operator RTE. But the government decided unilaterally in favor of a nuclear revival—a glaring example of the lack of democratic choice and decision-making within the current energy system.

Public planning still exists in France and can be made better, even amidst the rules and regulations developed in the EU. France could strengthen its planning via democratization and coordination—for instance, running public engagement and debates around everything from the generating fleet to rates and pricing. EDF has to be a cornerstone of this strategy but needs the capacity to do so. This means a re-integrated and empowered EDF—with a mandate with clear objectives, democratically debated, controlled by independent and democratic bodies, and auditable by all stakeholders.

Conclusion

It's a terrible accident of history that the rise of renewable energy technologies has coincided with an era of triumph for the market economy worldwide. In each of the studies we have included, private companies ultimately hold a major share of renewable energy generation assets. This is partly because private financing and market mechanisms were the dominant guiding principles of these countries' electricity regimes during the period when these technologies were brought to market. The turn to renewable energy has also therefore been used as a mechanism to further erode public ownership over energy assets—leading to worse jobs, low planning capacity, high rates, slow renewable deployment, and community pushback on projects and the transition.

While markets may have been the context that renewable energy was born into, that does not mean that it is the system that will deliver the world an affordable, green, and resilient energy mix. In the cases we described in this paper, there are existing public utilities or infrastructure that could be built up and strengthened for the sake of the transition instead of eroded. Below we summarize two key reasons that building up public sector engagement in renewable energy is better suited to the moment: planning rather than markets, and democracy and shared prosperity rather than profits.

Planning rather than markets

It's time to face up to the fact that electricity is profoundly ill-suited to the market. As Brett Christophers has elegantly described in his book, *The Price is Wrong*, renewable energy in the market infrastructure we have created does not produce the substantial and

stable profit necessary to convince private financial institutions that they should invest without significant government intervention. The state has had to step in and attempt to reconcile the inherent contradiction between the need to guarantee a return on investment to enable the development of new investments (particularly renewables) and the desire to preserve the market designed in accordance with the prescriptions of neoclassical economists. But this “hybrid” solution amounts to creating unnecessary risks and instabilities, and largely means that the public sector is already paying for the renewables to come online via derisking strategies like subsidies or feed in tariffs, even as the private sector erodes public institutions. In a context where investment needs are immense and urgent to make an energy transition, every dollar counts. We simply cannot afford to continue placating private capital for the luxury of preserving market logic.

Furthermore, when profit margins dictate how—and where—renewables are deployed, we see poorly conceived energy systems emerge. The need to maintain a perfect balance between production and consumption throughout the grid at all times requires complementarity and fine coordination between generators and the grid, not competition between players. Uncoordinated planning and investment leads to a raft of harms, including solar and wind energy going to waste, or being “curtailed,” due to inadequate transmission capacity. The capital-intensive nature of this sector, with its heavy investment requirements, is also an argument against competition. An alternative, easy-to-implement approach would be to return to public planning, ownership, and management of the means of production and public rates for all users, while improving democratic control over energy policy

and its implementation. Of course, because balancing would be necessary across national or state lines, there is a role for exchange to help with the organization of imports and exports.

This type of investment in planning requires more than just eliminating markets that are poorly designed to support renewable energy. It also requires building up the capacity of the agencies, utilities, and public institutions that are integral to the success of the transition. This means developing public, in-house expertise on grid modeling, financing, project development, community engagement, and a whole range of other capacities. This is a large project, but the public sector has the opportunity to build high-road jobs as part of their mandate and ensure that unions and workers have a strong say in the future of their energy system.

Democracy and shared prosperity rather than profits

A democratic approach to planning would bring mutually reinforcing political and economic benefits. What we saw in the case studies is that the private or market-based approach relies on a project-based strategy toward renewable energy development. This myopic approach can create negative impacts like under- or over-production as well as create community backlash against specific projects not contextualized within a larger and more democratic planning system. It is far harder to embed democracy into a transformation of critical infrastructure when it is done on a private, project-by-project scale. The alternative is democratic planning with proactive and robust outreach efforts that allow communities to intervene directly in the planning process and see the value accrue to them instead of outside financiers and renewables developers. By creating an effective feedback loop between long-term and national public planning with good local engagement, communities can see themselves reflected in the plans for transition and even accrue benefits in terms of lower utility costs or other values.

The planning process could then be shaped and informed by people with specific technical knowledge or expertise in other systems on which the success of the electricity planning effort depends. Unions can play a productive role, as they have been very active in attempting to shape the electricity system in countries such as South Africa and Uruguay. Facilitating better coordination between trade unions and the electricity sector will ensure that the process harnesses and strengthens the skills and capabilities of workers needed to implement renewable electricity generation. Such coordination can also help ensure that a steady flow of jobs is coordinated to the region where they will be needed, and can help overcome the reluctance that many unions may rightly feel towards the development of renewable electricity generation assets under current ownership regimes by ensuring that workers benefit from gold standard labor provisions.

Final Words

Based on the case studies, we see clear patterns emerging. We see the necessity of planning, the elimination of exposure to the profit incentive, and the potential social benefits that can accrue in places that prioritize public ownership. Our hope is that our observations of these patterns and recommendations will be of use to policymakers, program administrators and the general public—and to anyone who is wrestling with the question of how the electric grid may be made to serve the cause of equity, affordability, and a livable future.