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The Political Economy of Energy

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Abstract:

The political economy of energy has emerged through a cyclical process of modernization and development. In the natural world, all living beings possess a direct relationship with energy, for its movement from one biological body and physical state to another occurs through complex processes that enable us to breathe, eat, and dream. In the modern world-system, energy is a commodity and a matter of national security. The Industrial Revolution of the nineteenth and twentieth centuries generated a fossil fuel regime that continues to shape how we live and work. In the twenty-first century, energy development is informed by a combination of factors, including hydraulic fracturing, the emergence of a Second Cold War, and a multinational race to secure renewable energy resources and markets. This chapter engages world-systems theory and comparative case study analysis to query the structural drivers of conventional and renewable energy and unpack current market transitions. Identifying the emergence of an interlocking command-capitalist economy, I show how the collusion of powerful states and multinational corporations is fossilizing energy development, limiting horizons for international cooperation on global climate change. The transnational energy democracy movement offers a third-way approach to energy development. Having retained the social mandate of renewable utopias, energy democracy initiatives are emerging in various regions around the world, opening scope for grassroots social change.

Keywords:

Energy transition, oil and gas, renewable energy, energy democracy, sustainable development

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Acronyms

BIT – Bilateral Investment Treaty

BRI – Belt and Road Initiative

EU – European Union

IMF – International Monetary Fund

IOU – Investor-Owned Utility

NATO – North Atlantic Treaty Organization

OPEC – Organization of the Petroleum Exporting Countries

SAP – Structural Adjustment Programme

UNCTAD – United Nations Conference on Trade and Development

US – United States

USSR – Union of Soviet Socialist Republics

1. Introduction

This chapter queries the political and economic forces shaping energy development in the early twenty-first century. It employs comparative case study analysis to illustrate the interplay between conventional and renewable energy transitions, thus clarifying the hegemonic capture of a heterotopian alternative. As a theoretical concept, heterotopia denotes an actualized utopia, or an ideal put into practice. According to the French sociologist Michel Foucault (1966; 2005), heterotopias are sites of resistance that exist apart from and yet in relation to dominant social orders. Heterotopian cultures, discourses, and institutions arise to transform systems; however, these alternative orders also reflect the hegemonic forces they strive to change and are vulnerable to elite capture (Keahey, Nadesan, and Pasqualetti, 2022). Through comparative analysis, I show how powerful states and corporations are deepening investments in oil and gas while also

capturing heterotopian wind and solar technologies to service the fossil fuel regime. This chapter informs the political economy of energy by delivering an integrated assessment of mercantilist and liberal market forces, as these have occurred across the modern era.

Three event horizons reshaped conventional energy production and trade in the 2010s. First, the United States (US) broke into shale oil and gas by investing in hydraulic fracturing and horizontal drilling. Heralded by the political rhetoric of *drill baby drill*, this fracking revolution poisoned wells and sickened rural communities across the nation (Eckhouse, 2021). It also enabled the US to return to its historic market position as a leading oil producer, with this commercial success sparking the globalization of fracking (Li et al., 2022). Second, the European Union (EU) responded to Russia's invasion of Ukraine by enacting trade embargoes against Russian fossil fuels and shifting its imports to North America (Niknami, 2024). Meanwhile, Russia's leading energy firm, *Gazprom* was busy brokering a multi-billion-dollar deal with China to develop the Power of Siberia pipeline, which began delivering natural gas to China in 2019 (Kaczmarski, 2023). The formation of an Eastern energy bloc has signified a return to a multi-polar world-system against the backdrop of a Second Cold War. Third, multinational energy firms have continued to rely upon free trade agreements to intensify extraction in the formerly colonized global South (Müller, 2024). Multinational capital also is profiting from resource nationalism by securing state funds and military services to extract energy from colonized Indigenous lands in the Arctic and sub-Arctic global North (Rutland, 2022).

World-systems theory provides a sociological lens to unpack the historically cyclical movement between liberal and mercantilist eras of development, shedding critical light

on the current geopolitical crisis. My analysis shows how energy markets have reduced these opposing ideologies to a complementary set of trade strategies that corporations and states deploy at will. This command-capitalist world-system is engaged in a very material race to the bottom, as powerful brokers are prolonging the life of fossil fuels by forcing open cracks in the planetary bedrock to extract diminishing pockets of oil and gas that are converted into exhaust through incessant industry and then dumped into an increasingly polluted and chaotic atmosphere in which we all live and breathe. Scientists who measure land and sea surface temperature, atmospheric temperature, sea levels, ocean heat content, humidity, snow cover, ice extent and glacier mass, are finding strong evidence for global warming across all these indicators (O'Hara, 2022, p. 16). Indeed, the feedback loops occurring between these systems may be driving climate change at a more rapid pace than science presently is able to quantify.

Renewable energy has been lauded as the global solution to climate change. However, the evidence suggests that the renewable energy megaprojects being developed around the world today are far from intelligently designed. In an international study on corporate energy transition, Contreras, Ruiz, Campos-Celador, and Fjellheim (2023) examine the cases of Mexico, the Western Sahara, Norway, and Spain. This research team finds that corporate brokers are building massive wind and solar infrastructures in ecologically and culturally vulnerable spaces then transporting this energy through pipelines to distant cities for consumption. Far from enacting the bidirectional capacity of wind and solar technology by investing in microgrid systems that reduce costs and maximize efficiency, corporate brokers are treating renewable energy as a technocratic add-on to fossilized policies and practices. Given the elite capture of a formerly heterotopian movement,

renewable energy is vulnerable to the geopolitical forces shaping conventional energy transitions in a world roiled in conflict.

As a current heterotopian movement, energy democracy offers more meaningful scope for systemic change. Located in the liminal spaces of the late-modern world system, energy democracy actors have retained the social mandate that corporate-command approaches to renewable energy have sought to erase. Energy democracy is a third-way model for energy transition that seeks to improve access to affordable and clean energy through localized and community-based investment. While this movement is active in many regions around the world, transnational networks are nascent, and individual initiatives have struggled to surmount the complex barriers involved in any collective endeavour that seeks to transcend what exists by rethinking what is possible.

I conclude the chapter by arguing that the solution to the energy crisis lies not in the liberal politics of deregulation which empowers global capital, nor in mercantilist regulations that empower centralized states. Rather, the solution lies in returning to the utopian social values that drove initial investments in renewable energy. There is an urgent need for renewable energy cooperatives, collectives, and municipalities to effectively train people to participate in collaborative management and governance practices. There also is a need to strengthen network and coalition building. In a world where predatory corporations and warring states vie for status and control by capturing ideas and resources, energy democracy is not immune to the threat of power, but the movement's social mandate nevertheless opens scope for breaking structural relations of dependency.

2. Discussion

2.1 The Political Economy of the World-System

World-systems theory emerged in the 1970s to explain the forces shaping international development. It grew out of dependency theory, which provided a critical counternarrative to modernization theory, the hegemonic body of development knowledge during the post-war era. Essentially, modernization theorists assumed that all nations went through a linear process of development, progressing as quickly as their willingness to modernize. Identifying high mass consumption as the pinnacle stage of development, the influential US economist, Walt Rostow (1960) differentiated between *developed* and *developing* nations, encouraging the latter to shift from an agrarian and spiritual way of life to an industrial and secular mode of production.

Dependency theory rejected these ahistorical assessments. The German sociologist, Andre Gunder Frank (1966), coined the term *underdevelopment* to explain the extractive developmental process by which Europe had enriched itself through the impoverishment of its colonial satellites. Hailing from Brazil and Chile, Fernando Henrique Cardoso and Enzo Faletto (1979), traced the underdevelopment of Latin America to the sixteenth century Spanish conquest. Showing how capitalism evolved in tandem with colonialism, Cardoso and Faletto differentiated between wealthy ‘core’ areas that deployed capital to strip resources and labour from impoverished ‘peripheral’ areas, resulting in structural relations of dependency.

The US sociologist, Immanuel Wallerstein, transformed the discourse by publishing four volumes on the modern world-system over the course of his long career. Wallerstein (1974; 2011) began by identifying global political economy as a singular and interconnected world-system comprised of core, semiperipheral, and peripheral zones. If Wallerstein's first volume showed how the semiperiphery plays a key structural role as a middle trader in the development of capitalism, it also clarified the ability of countries and regions to move across categories, as in the case of a declining core or a modernizing periphery. In his second volume, Wallerstein (1980; 2011) detailed the mercantilist wave of capitalist development that occurred from the sixteenth to the eighteenth centuries. Grounded in a spirit of economic nationalism, mercantilist policies involved: (1) seizing control of colonial resources through territorial expansion; (2) imposing trade tariffs to limit imports on goods from other countries, and (3) exporting manufactured goods to accumulate wealth. During the classical era of mercantilism, bullion, the precious metals held in a national treasury, determined the monetary standing of a country. Thus, economic nationalism evolved as a zero-sum game, wherein one nation 'wins' by impoverishing other nations.

Wallerstein's final volume (2011, p. 34) examined the liberal turn of the world-system during "the long nineteenth century," or the period between 1789-1914. According to his assessment, the Western core subverted the egalitarian ideals of the French Revolution by instituting a citizenship regime based upon a politics of exclusion that involved distinguishing between active and passive citizens to accord capital greater equality under the law. Adam Smith's (1776; 1999) liberal theory of economic development also shaped nineteenth century development. Rejecting the zero-sum logic of mercantilism, Smith

argued that free trade relationships would spark domestic and international competition enabling countries to determine their competitive advantage in production and trade. By the end of the nineteenth century, this free-wheeling wave of economic liberalism had resulted in massive monopolies. The concentration of capital into fewer hands resulted in two world wars that were interspersed by the stock market crash of 1929 (Stahl, 2019).

A Keynesian model of regulated capitalism informed international development in the mid-twentieth century post-war era. Yet Smith's concept of laissez faire capitalism resurfaced in the International Monetary Fund (IMF) and World Bank in the decade leading up to the Reagan-Thatcher revolution of the 1980s. The subsequent collapse of the Union of Soviet Socialist Republics (USSR) inculcated a period of free market triumphalism that involved opening the former Soviet bloc to Western capital (Keahey, 2024). Russia was particularly impacted by this geopolitical shift. In contrast to China, which refused to accommodate neoliberal policy, Russia agreed to enact structural adjustment programs (SAPs) in the 1990s to align its markets with neoliberal ideals. Austerity exacted a "terrible cost from Russia" as the ensuing economic regression caused death rates to rise so high that the "population fell by over 5 million over the next decade and a half" (Desai, Freeman, and Kagarlitsky, 2016, p. 501). Whereas the USSR had possessed the world's second largest economy and enjoyed considerable geopolitical power in the mid-twentieth century, post-Soviet Russia found itself relegated to the semiperiphery, partially dependent upon a triumphalist West. The anger of a newly impoverished people seeded Russia's return to authoritarianism in the 2000s.

Backed by global financiers, this neoliberal wave of development served to concentrate capital amongst a handful of multinational corporations, ultimately destabilizing the triumphalist West as well. The global financial crisis of 2007-2008 lay bare the faults of neoliberalism in Europe and North America, where economic stagnation resulted in the resurgence of ethnic nationalist politics (Cafruny, 2016). While free trade agreements continue to structure production and trade relations in countries around the world, core nations are enacting tariffs in energy and technology, signifying a neomercantilist turn in the world-economy. Unlike classical mercantilism, which prioritized the accumulation of bullion, neomercantilism in theory emphasizes economic stability through the application of modern policy instruments, such as the provision of government subsidies and industry protections to strengthen domestic production in areas where there are prospects for competitive advantage (Hettne, 1993). Yet zero-sum logic remains an underlying driver of the economic nationalist policies being enacted today. As Selim Kurt (2023, p. 97) finds, "neomercantilist policies aimed at 'impoverishing the neighbor' around the world" are resulting in tariff wars between core nations. These are hindering the ability of any one society from securing economic stability. The next section unpacks the historical development of modern energy systems in a world where liberal and mercantilist policies have cyclically structured production and trade relations.

2.2 Energy Development in the World-System

Coal, oil, and gas remained at the periphery of the world-system until the onset of the Industrial Revolution. Throughout the classical mercantilist era, Europe's energy system largely derived from three main vegetable resources: food, fodder, and firewood

(Malanima, 2006). While wind and water energy were a fairly minor source of energy in early modern villages, where small-scale energy actors built mills to winnow grain, wind power nevertheless played a central role in the founding of the modern world-system, as wind propelled the merchant ships and navies that enabled European conquest and colonization (Gonzalez, 2018). In the late eighteenth century, coal fuelled the British Industrial Revolution and the subsequent globalization of industrial development (Arrighi, 1994). In the twentieth century, US oil powered the global economy, although it is important to note that energy development has been far from a linear process. Alongside oil and gas, coal continues to remain a major source of energy, particularly among peripheral and semiperipheral economies (Gellert & Ciccantell, 2020).

The liberal state also has played a key role in energy development through the formation of the public utility. In the late nineteenth century, the US innovator, Thomas Edison, invented the lightbulb, patented a distribution system, and founded the world's first investor-owned utility (IOU) in New York City, where this private firm sold electricity to modernizing consumers. Capital financed the early development of the electrical grid as business interests quickly moved to profit from this new commodity (Maher, 2022). However, in the early twentieth century, power stations became incorporated into nationally coordinated grid systems within core areas, as Button (2018) describes in her study on British electrification. This conversion of electricity from private commodity to public utility occurred during a progressive era of governance, when policymakers rejected the classical liberal ideals of competition and freedom and asserted their faith in the power of states to regulate capital. In the US, Roosevelt's New Deal established public works projects in sectors such as energy and water, which were viewed to be

natural monopolies as these relied upon access to finite resources, such as land (England, 2016). The president of Commonwealth Edison in Chicago, Samuel Insull, also shaped the development of the public utility. According to Tidwell and Tidwell (2022, p. 12), Insull replaced "a system of small power companies producing limited expensive power beholden to local politicians" with a single company model that he conceived to be answerable solely "to the 'public' and not specific individuals or communities." As Insull occupied a position of power in a core area at a crucial moment in time, his business model sparked the development of public utility infrastructures around the world during the mid-century period of modernization.

The world-system pivoted to a new era of economic liberalism in the 1970s, when skyrocketing oil prices triggered an economic downturn. Having been encouraged to take vast loans from transnational banks to support modernization projects, semiperipheral and peripheral nations in the formerly colonized global South struggled to service their debts, "triggering panic among Northern creditor governments" (Simon, 2008, p. 87). Thus, neoliberalism initially was implemented through SAPs that brought austerity to the indebted nations of the late-twentieth-century world-system. The Reagan-Thatcher revolution subsequently brought neoliberal restructuring to the Anglo-American core. Extolling their faith in the power of capital, these interests called for the removal of trade regulations and privatization of goods and services, reversing many of the gains made by US and British labour movements and hollowing out the public utility. For example, the US Energy Policy Act of 1992 caused the electricity industry to shift to a hybrid market system that benefited IOUs and allowed for the accumulation of wealth by economic elites (Hess, 2011).

Yet energy never has been fully captured by economic liberalism given its role as a national security (Nadesan, Pasqualetti, & Keahey, 2022), and core areas have always deployed protectionist measures to shield national economies from market shocks, even during periods of trade deregulation (Wallerstein, 2011). The following two sections unpack conventional and renewable transitions, showing how an interlocking corporate-command economy is fossilizing production and trade in the early twenty-first century.

3. Analysis

3.1 The Case of Conventional Energy

In this section, I engage the concept of cold war to unpack three geopolitical shifts that are impacting fossil fuel development in the twenty-first century. These are: (1) the rise of fossil triumphalism in the global West, (2) the formation of an energy bloc in the global East, and (3) the intensification of energy colonialism in the global South and on currently colonized Indigenous lands around the world.

According to Richard Sakwa (2025), a state of cold war occurs when ideological divisions engender a breakdown in international cooperation between two powerful countries or regions. Cold wars do not involve direct military conflict but are fought through the proliferation of weapons of mass destruction, proxy wars, and cyberwarfare. Cold War I emerged at the end of World War II, when the capitalist First World and the

communist[1] Second World established opposing views of development and sought to expand their territorial influence by currying favour with the politically unaffiliated Third World. In the First World, North America and Western Europe formed the North Atlantic Treaty Organization (NATO) to securitize its territories from the Second World, which included the USSR, Eastern Europe, and other Soviet allies. This cold war was also fought in the historically colonized Third World where the USSR and the US deployed the soft power of diplomacy and development aid to win over newly independent nations in Latin America, Africa, and Asia.

The First Cold War ended in 1989 when the Soviet Union collapsed, giving rise to 25 years of 'cold peace,' wherein the military-industrial and security-intelligence complexes "that had fought the original cold war remained in place" (Sakwa, 2025, p. 8). The Second Cold War emerged in the wake of Russia's 2014 annexation of Crimea, but more broadly in response to the unipolar globalization wrought by the triumph of Western markets at the turn of the twenty-first century. While the historic Second World has embraced capitalism and the historic First World is flirting with authoritarianism, Cold War II nevertheless is reifying an historic West-East divide. These divisions are particularly visible in the the energy sector where powerful nations are deploying a mix

[1] While the USSR and China are commonly described as communist in political discourse, it is important to remember that the Second World has never achieved communism in practice. According to the original utopian vision published by Karl Mark and Friedrich Engels (1848; 2002), communism denotes a stateless and moneyless society, meaning that the very notion of the communist state is a logical fallacy.

of neoliberal and neomercantilist policies to secure resources and dominate markets, with ramifications for the semiperipheries and peripheries of today's Global South.

a. Fossil Triumphalism in the Global West

During the 2010s, the US shale revolution sparked a period of heightened market competition. According to data released by the Energy Information Administration (EIA, 2012), US proved oil and gas reserves rose steeply in 2010, with each of these reserves increasing by around 12 percent due to rapid development in hydraulic fracturing, horizontal drilling, and the development of other tight extraction technologies. Powerful oil producing states erupted in conflict when global markets became glutted with crude oil and natural gas. In 2014, the Organization of the Petroleum Exporting Countries (OPEC)[2] launched an oil price war when its most powerful member, Saudi Arabia, convinced other member countries to maintain high rates of production in the face of declining prices (Mahdi, 2020). The goal was to halt the shale revolution by deflating market prices below the cost of fracking. In essence, Saudi Arabia sought to replicate the successes of the 1985-1986 oil price war, when OPEC succeeded in maintaining its market share by raising production to deflate prices and weaken its competitors. Yet the

[2] OPEC is a global South organization comprised of semiperipheral Middle Eastern, African, and Latin American oil producing nations. However, it is informally led by its most powerful member, Saudi Arabia, a former British protectorate whose vast oil reserves enabled it to transition into a high-income country during the oil crisis of the 1970s.

2014-2016 oil price war ended differently, for market interference encouraged US shale interests to reduce the cost of fracking.

The shale revolution has re-entrenched conventional energy development. Not only have horizontal drilling and hydraulic fracturing technologies extended the life of fossil fuels in the decades to come, but the US fracking boom also has resulted in a new wave of fossil triumphalism that is hindering international cooperation on global climate change. While the US became the world largest producer of oil and gas under President Obama, the first Trump administration played a key role in rolling back global commitments to climate change. According to Farid Guliyev (2020, p. 1), "Trump's 'America First' energy policy" involved: (1) removing domestic environmental regulations, (2) withdrawing from the Paris Agreement and other multilateral institutions, and (3) sowing public doubt in science by rejecting scientific research on matters pertaining to climate change.

While other US presidencies have deployed neomercantilist strategies to maintain US dominance in the world-economy, the Trump administration went one step further by sacrificing the health of its own citizens in a zero-sum bid to enrich US coal, oil, and gas interests. By 2020, Trump had removed 72 environmental regulations and was in the process of removing 27 more, crippling a regulatory system that played a pivotal role in ensuring health and well-being by reducing air and water pollution, limiting toxic substances, and prohibiting drilling in fragile areas (Popovich, Albeck-Ripka, & Pierre-Louis, 2020). As Trump's first administration failed to follow procedural rules when slashing environmental policy, President Biden reversed many of these changes during

his term. However, Biden more broadly continued to support the interests of Big Oil. With Trump returning to the presidency in 2025, Trump 2.0 may take greater care in its approach to environmental deregulation, although the value of such an exercise is questionable due to the current glut in oil and gas production (Gerrard, 2024, p. 2).

b. Eastern Energy Bloc

Russia and China meanwhile spent the 2010s negotiating the development of a Sino-Russian energy bloc. Russia was seeking Eastern markets as part of its retreat from the triumphalist West while China wanted to reduce its dependency upon OPEC (Boban & Petrović, 2021). In 2014, Russia and China signed a $400 billion contract, launching the construction of the Power of Siberia Pipeline just two months after Russia's invasion of Crimea and several months before the onset of the OPEC-led oil price war. Spanning 4,000 kilometres, the Power of Siberia pipeline began operations in 2019, enabling Russia to continue its defiant stance in the face of 15 rounds of sanctions levied by the EU between 2014 and 2024 (European Council, 2025). Examining Russia's foray into Asian markets, Morena Skalamera (2021, p. 42) argues that the Sino-Russian relationship is grounded in a mutual distrust of US hegemony and a shared "desire for a more multipolar world order." Thus, the Power of Siberia partnership is but one step in establishing a broader Eurasian or Eastern energy bloc. Although Russia's proposal to build a Far East pipeline through North and South Korea is unlikely to be realized due to sanctions against North Korea, Russia has offset losses from the Ukrainian war by offering discounted crude oil prices to India and Vietnam. In 2023, India became the

second largest importer of Russian fossil fuels, following China's lead by purchasing 32 percent of Russia's crude oil exports (Chaudhary, 2023).

Russia and China may be political allies, but these nations are far from economic equals. China is second only to the US in gross domestic product (GDP) and has the world's largest export economy. In 2023, Chinese exports generated $3.5 trillion whereas Russia garnered $465 billion, making its semiperipheral economy comparable to that of Brazil (World Bank, 2025). China enjoys lucrative relations with the West, while Russia has become dependent upon China for most of its trade. In 2023, China garnered 12 times the profit from its exports to the US and the EU than from Russia; thus, it is unlikely that China will jeopardize these lucrative trades to evince ideological solidarity with Russia.

There also appear to be limits to cooperation between the two nations. Although Russia and China are in negotiations to build Power of Siberia 2, Beijing has been slow to approve this second pipeline due to political and economic risks (Yu, 2024). Alternately known as the Altai Gas Pipeline, Power of Siberia 2 would transit through the Altai Republic, an ethnic homeland currently colonized by Russia and Mongolia. The pipeline proposal has met with resistance from the Indigenous Altai, and Mongolia has been slow to negotiate transit through its own lands. Perhaps more importantly from Beijing's perspective, a second Siberian pipeline would make China overly dependent upon Russia for energy.

China's national priority is energy security (Taylor, 2021). As the world's sixth largest oil producer, China began importing oil in 1993, during a period of rapid industrialization. In the late 2000s, China's national oil companies bought overseas assets at inflated prices in

a bid to secure energy for development at a time of dwindling global supply. When the US shale boom glutted gas and oil markets, China reverted to the neoliberal approach of acquiring assets at market value. Yet it has retained "mechanisms of control that, in theory, will enable oil to be directed to China in the case of conflict" (Taylor, 2021, p. 908). Despite its imperial ambitions in post-Soviet Central Asia, Russia has had to accept China's presence in Kazakhstan, where China has funded the construction of pipelines and powerlines to provide "an alternative source of energy supply to Beijing" (Tang & Joldybayeva, 2023, p. 1506).

c. Resource Colonialism in the Periphery

According to Navajo scholar, Andrew Curley (2021, p. 79), "resources" and "colonialism" are synonyms, for colonialism, or "the dispossession of Indigenous lands…is a project intent on turning the stuff of nature into the raw commodities that are needed for global capitalism." In the context of the modern world-system, core states deploy a wide range of ideologies, programs, and policies to extract resources from the periphery and expand state power (Gritsenko, 2018). Yet resource colonialism does not lead to unidimensional outcomes, for peripheral peoples and nations are impacted in different ways, depending upon their position in the world-system. For example, China historically has been part of both the Second and Third Worlds (Li, 2021). Having watched its resources flow to Europe during a century of British imperialism, China underwent a communist revolution and formed into the People's Republic of China in 1949. In the 1990s, China rapidly modernized. While it continues to ideologically claim a global South identity, China now is the de-facto economic leader of the Eastern bloc as

well as a key player in Western markets, making it very much part of the capitalist core of the twenty-first century world-system.

These geopolitical shifts have impacted the semiperipheries and peripheries in the global South, for the Chinese state has begun financing international development through its Belt and Road Initiative (BRI). Established in 2013, the initiative purports an ideology of "South-South" cooperation in light of China's own experience with anti-imperial struggle (Rudyak, 2023, p. 5). In material terms, BRI supports infrastructure development through loans from state-owned banks to state-owned enterprises, with energy connectivity a key pillar of engagement. In the case of Central Asia, Kazakhstan, Turkmenistan, and Uzbekistan have used Chinese investment in oil and gas pipeline infrastructure to secure greater independence from Russian imperial interests (Tang & Joldybayeva, 2023). In the case of Africa, Chinese investment has caused many nations to fall into debt. Current African dependence on China may be a recurring "feature of uneven capitalist development" rather than an intentional debt trap (Carmody, 2020, p. 6) Yet China does secure loans against local resources, has a history of giving loans to countries that are likely to default, and grants itself significant leverage in cases of default, all of which support the ongoing flow of African resources to China. Apart from its doctrine of state-led development, China's BRI system does not appear to differ markedly from the neoliberal mode of development that enabled the global West to continue capturing resources from African nations after their independence from Europe.

Neoliberalism continues to structure trade between the core and periphery of the world-system. Possessing little in the way of its own oil and gas, France has negotiated Bilateral

Investment Treaties (BITs) with 85 countries, most of which are located in the global South (UNCTAD, 2025). As the fourth largest energy corporation in the world, the French investor-owned firm, TotalEnergies, has taken advantage of these neoliberal trade agreements to intensify oil and gas exploration in France's former colonies and adjacent former colonies (Llavero-Pasquina, Navas, Cantoni, & Martínez-Alier, 2024), In Myanmar, for example, TotalEnergies has collaborated with the military dictatorship to exploit the Yadana gas field and construct a pipeline to the Thai border, resulting in land confiscation, rape, extrajudicial killings, the forced displacement of ethnic minorities and other egregious human rights violations.

Finally, neomercantilist policies have intensified resource colonialism in currently colonized Indigenous territories. Canada is a key agent in the shale revolution, for it began extracting shale oil from tar sands located in Northern Canada during the 1960s. At the turn of the twenty-first century, the Canadian state colluded with corporate interests to intensify shale extraction, "branding tar sands as 'ethical oil' and labelling production companies as 'sustainable'" to obscure the theft of land and energy from Canada's Indigenous First Nations (Parson & Ray, 2018, p. 2). As Canadian tar sands are located on or near First Nations land, the industry is repeating an historical pattern of appropriating peripheral resources for core economic growth. By coopting the language of sustainability to extoll idealized imagery of pristine nature and economic prosperity, Canada has sought to hide the environmental impacts of tar sand production, which in practice involves denuding the entire landscape of all flora and fauna to extract the oil in the soil. According to Parson and Ray (2018, p. 17), toxic solvents are used to process tar

sands, polluting waterways and harming the health of First Nations communities via a form of "slow violence" that is "carried in people's bodies" across generations.

If the Canadian corporate state has captured the discourse of sustainability to cloak an ongoing practice of resource colonialism, the following section shows how a similar pattern of elite co-optation has occurred within renewable energy. At the same time, the differing nature of renewable energy offers the world the technical means for moving beyond the grim geopolitics of conventional energy and the hegemonic modes of international development that coal, oil, and gas have invoked.

3.2 The Case of Renewable Energy

The concept of renewable energy is by no means new. Wind and solar power comprise a set of ancient technologies that have shaped the development of human societies across thousands of years. If wind power provided Europe with the means to colonize Latin America, Africa, and Asia during the early modern era, solar power has underpinned urban planning as far back as the Roman empire, when first-century elites invented windowpanes to bring warmth and light into buildings. In a seminal article on the history and future of renewable energy, Cesare Silvi (2008, p. 411) states that humans "had learned to transform the power of falling water, blowing winds, and more recently, the sun's heat and light" by the end of the nineteenth century. Despite our globalized addiction to fossil fuels, it is important to remember that we have been locally engaged with renewable energy throughout our existence as a species.

Wind and solar power have propelled the utopian imaginary for a better world across centuries of colonial occupation and imperial rule. In 1922 the Russian geophysicist, Boris Veinberg, penned a modern interpretation of the renewable energy utopia, in a story that demonstrates an early understanding of the calamitous effects of the Anthropocene, our current geological age of human dominance. Publishing a short work of science fiction from Siberia, Veinberg imagined a far future where humans "remade the biosphere" (Russ, 2022, p. 491). In his story, humans had become one political entity acting across vast scales of time. Taking thousands of years to bring a planetary climate that had been heavily polluted by carbon dioxide under control, Veinberg's humanity finally succeeded in creating an egalitarian world where people were able to live freely and creatively, with plentiful access to solar power. On the other side of the world, Paolo Soleri, began construction on the Arcosanti imaginary in 1970. Located in Arizona's high desert, this experimental town – which continues to operate as an artisanal space – made use of such technologies as passive solar heating and water cisterns to bring urban living into harmony with the surrounding natural environment (Lea, 2013). Whether imagined in Soviet Russia or the capitalist US, the twentieth-century renewable energy utopia was grounded in a clear, if not always realistic, awareness of the social dimension of development and the desire for a world where people are able to form and maintain strong relationships with one another and other species.

Renewable energy offers a critical means for addressing the twenty-first century crisis of global climate change, but renewable technology is being captured by command-capital economics. In the following paragraphs, I examine three modes of organization that are driving current transitions to renewable energy. First, neomercantilist interventions are

being deployed by states as part of an effort to secure the natural resources used in renewable energy infrastructure and thus ensure energy security and geopolitical dominance in the decades to come. Second, neoliberal projects are being enacted by corporate actors who are assimilating renewable technologies into the existing fossil fuel regime in a bid to rebrand dirty industries as sustainable enterprises. Third, energy democracy initiatives are being enacted by grassroots actors who are working with communities around the world to establish local and democratic modes of energy production. Situated in the in-between spaces of the late-modern world-system, energy democracy is a heterotopian project, for it is the only one of these modes of organization that has retained a commitment to the social imaginary of a more just world.

a. The Neomercantilist State

To begin, state interventions are impacting transitions to renewable energy. In the 2010s, China, the US, and the EU became entangled in a neomercantilist struggle for control of solar photovoltaic production and markets. Viewing solar as a key aspect of its energy security strategy, the Chinese state subsidized solar innovation, and by 2010 this nation was producing 40 percent of the global supply of solar panels (Caprotti, 2015). China's gift of cheaper and more efficient solar photovoltaic technology came at a steep cost to the rest of the world, where companies collapsed in response to rapidly falling prices (Hart 2020). The EU and the US responded by launching a solar trade war against China. The EU quickly moved to levy antidumping tariffs against Chinese solar photovoltaic goods, but it eventually struck a political compromise by establishing minimum pricing for Chinese imports (Goron, 2018). In the US, a small group of actors managed to

override “a broader free trade coalition representing the majority of US solar photovoltaic firms” by using US trade law to levy tariffs against China (Hughes & Meckling, 2017, p. 257). The US has continued to escalate the solar trade war by expanding upon its tariffs against China in subsequent years and across several political administrations.

As a net importer of fossil fuels, the EU has come to view the transition to renewable energy as a matter of security; indeed, wind and solar now supply more energy to its electricity grid than do fossil fuels (Fulghum & Graham, 2024). As the leader of the shale revolution, the US has a vested interest in blocking transitions to renewable energy. According to Sebastien Houde and Wenjun Wang (2022), US tariffs against Chinese solar goods have not improved domestic manufacturing capacity, but these have resulted in higher pricing for US solar consumers and installers, hindering national transitions to sustainable energy. Indeed, Russia and Kazakhstan have begun to outpace the US in renewable energy development. While these post-Soviet states are major oil producers with little interest in environmental conservation, Russia and Kazakhstan possess many of the natural resources needed to produce renewable energy. Recognizing this competitive advantage, the former Soviet bloc is working to secure a dominant position in post-fossil energy production and markets (Koch & Tynkkynen, 2021).

b. The Neoliberal Corporation

Global capital is the next key actor in renewable energy transitions. In the US, “corporations are the fastest growing source of renewable energy demand,” with corporate demand nearly tripling in the 2010s alone (O'Shaughnessy, Heeter, Shah, & Koebrich, 2021). Much of this growth has been concentrated within the electricity sector,

where decades of neoliberal policymaking have resulted in public-private partnerships between corporate actors and public utilities. In O'Shaughessy and colleagues' assessment, corporate targets in renewable energy are far more aggressive than those found in traditional public utilities; thus, in the authors' view, the corporate modality offers a key mode for accelerating the transition to renewable energy, unlike statist approaches that are bogged down in regulatory conventions.

More critical research suggests that corporate energy transitions are reproducing an historical pattern of resource colonialism through a process of energy colonization. Examining renewable megaprojects in Spain's peripheral territory of Grenada, Sánchez Contreras et al. (2024, p. 4) describe how the corporations involved in this region have deployed a culturally and ecologically destructive mode of engagement by placing renewable megaprojects in "Sacrifice Territories" whose lands and lives are consumed to "fulfil the needs" of the corporation. Similar patterns of ecological, cultural, and psychosocial abuse arise in broader cases where colonial dynamics are in play. Consider for example, Susana Batel's (2021) insightful analysis of "the many voices and scales of renewable energy colonialism" which clarifies the transnational, international, and intranational forms of exploitation occurring in renewable energy. As corporate practices have more to do with brand management than with any commitment to social or environmental well-being, there is a need to consider the role that small-scale enterprises and community-based investments may play in bringing the social dimension back into development.

c. Energy democracy

Energy democracy challenges the other two models by offering a bottom-up approach to renewable energy development. As a global movement comprised of grassroots interests, the primary goal of energy democracy is to localize and decentralize power in the energy sector, typically by establishing small-scale production and community control. It takes advantage of the back-and-forth capacity of renewable energy flows to enable consumers to become producers, and thus *prosumers* of energy, providing an actionable means for generating profit within and between communities (Szulecki, 2018).

As an umbrella organization for the global movement, the Energy Democracy Alliance (2025b, p. 1) recognizes that "there is no singular understanding of the call for energy democracy." However, it broadly asks constituents to follow five principles for engagement. These encompass commitments to: (1) universal access and social justice; (2) renewable, sustainable, and local energy; (3) public and social ownership; (4) fair pay and creation of green jobs; and (5) democratic control and participation. A wide range of initiatives fall under the movement's banner, including anarchist calls to delink from public utilities in California (Brennan, 2023), the formation of energy justice coalitions in India (Shukla & Swarnakar, 2022), and the construction of renewable energy communities in the Netherlands (Jochemsen, Mees, & Akerboom, 2024).

The case of energy democracy illustrates the importance of combining social and environmental concerns to achieve more just transitions. Yet as a heterotopian movement, it faces the paradox of establishing participatory governance and community ownership in a world accustomed to top-down management and cut-throat competition. While there is a need to systematically map the movement, a cultural orientation towards democracy

appears to be a precondition for engagement. The global map provided by the Energy Democracy Alliance (2025a) suggests that the movement is most active in Europe and other regions with a history of democratic rule (Energy Democracy Alliance, 2025a). That said, China and Russia are pursuing their own strategies for public engagement in energy governance. In China, for example, environmental approaches to energy development have begun to weave democratic and participatory elements into energy policy, achieving better outcomes than authoritarian measures have been able to realize alone (Zhang, 2024).

These confluences suggest the potential for the transnational energy democracy movement to engage the global East, helping to reconcile an historic divide. Wherever in the world one may be located, it takes considerable time and investment for practitioners to build collaborative capacity. Examining five cases of collaborative governance in Europe and the US, Berthod and colleagues (2023, p. 562) document the failure of bottom-up projects to achieve lasting impacts and surmise that participatory governance should be mandated "as an outcome rather than an input." Lacey-Barnacle and Nicholls (2023) also find that it is critical to build public participation from project outset. In their analysis of energy democracy outcomes, these scholars find that projects tend to return to business-as-usual when executives retain control over governance. Thus, it is important to note that the concept of energy democracy conveys a "process, an outcome and a goal" (Szulecki & Overland, 2020, p. 1). By sharing knowledge across politically charged borders, energy governance initiatives that involve public participation may gain the complexity of insight needed to strengthen outcomes, whether this involves learning how

to deepen public participation in governance or obtaining the capacity to scale financing and policy across collaborative networks.

4. Conclusion

Due to its role as a national security, energy offers critical insight into the current neomercantilist turn in international political economy. While the liberal state emerged in the core areas of the nineteenth century world-system, energy development has continued to be shaped by neomercantilist policies, particularly in the late nineteenth century, when the European core extended its reach the most remote corners of the world in a bid to secure control over natural resources (Nadesan & Keahey, 2023). As I have discussed in this chapter, the patterns of the late nineteenth century have resurfaced in the early twenty-first century, at a time when powerful energy brokers are combining neoliberal and neomercantilist trade strategies to secure access to dwindling reserves of oil and gas and thereby command a dominant position in global markets.

After 25 years of cold peace, the world-system entered a Second Cold War in 2014, reifying an historic division between the global West and East, with ramifications for the global South and stateless Indigenous territories. Whereas Sakwa (2025) identifies Russia's annexation of Crimea as the primary cause of the Second Cold War, it is important to note that the West also has played a role in destabilizing prospects for global cooperation. Not only did an Anglo-American wave of free-market triumphalism open post-Soviet Russia to capitalist penetration through the imposition of SAPs that resulted in the deaths of millions of people, but US fossil triumphalism also has halted international negotiations to reduce dependency upon fossil fuels, stalling this nation's transition to greener economies.

China's movement from a global South periphery to core economy has opened prospects for a multipolar world order, but while the formation of an Eastern energy bloc may challenge the unipolar desires of a triumphalist and fossilized West, my analysis of conventional energy suggests that China's engagement in the global South may be reinforcing, rather than redressing, a long history of resource colonialism that continues to subjugate peripheral countries and peoples. Nor are renewable energy projects immune from these geopolitical forces, as investments in this sector are being driven by zero-sum logic. Far from realizing the relational capacity of wind and solar technologies, statist and corporate transitions are capturing renewable energy, maintaining top-down control over production and trade.

Energy democracy is the current heterotopian alternative to hegemonic systems and command-corporate cultures that endlessly replicate hot and cold wars to secure resources for development. However, it is unclear whether the social imaginary of energy democracy can be realized in a world-system were powerful forces are fossilizing renewable energy. At the same time, the two-way functionality of renewable technology offers the movement a critical means for establishing localized micro-grids and small-scale energy systems, enabling communities and households to regain a measure of sovereignty over a basic need at a time of global instability. Energy democracy should not be seen as a panacea for the problems facing societies in the early twenty-first century; yet this movement is opening the door to a third-way approach to development that seeks to transcend structural relations of dependency. If this transnational movement is to gain the capacity to enact and scale socially and environmentally responsible approaches to energy development around the world, there is an urgent need for knowledge sharing and network building across borders.

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