Green Imperialism, Sovereignty, and the Quest for National Development in the Congo

Abstract: In this article, the term ‘green imperialism’ is deployed to denote the specificities of contemporary imperialism within the context of the hoped-for global transition towards low-carbon capitalist economies and societies in the coming decades. The Democratic Republic of the Congo (DRC) provides a modern exemplar of green imperialist dynamics in action, with hegemonic powers seeking to position the Congolese economy as an exporter of low-cost, low-carbon metals and an open market for the entry of renewable energy finance and technologies. The political response to green imperialism in the DRC is reproducing a model of mining-led national development that historically has delivered little by way of material improvements for most Congolese, thus undermining the prospects of prosperity in the country. Albeit this time around with the possibility of expanded access for some to renewable forms of energy as a foreign-owned private commodity, and all the limitations and contradictions this new model of energy delivery entails.

Keywords: imperialism, sovereignty, development, cobalt, renewable energy, Congo

Introduction

Nearly five years ago now, in January 2019, Felix Tshisekedi – son of veteran opposition leader Etienne Tshisekedi – was inaugurated as the fifth President of the Democratic Republic of the Congo (DRC). Later that year, the United States (US) and the European Union (EU) unveiled their Green New Deals, looking to reinvigorate stagnating capitalist economies by catalysing massive growth in the manufacturing of renewable energy and other green technologies, creating millions of high-skilled and well-remunerated jobs in the process. Ajl (2021, 77) has labelled these low-carbon capitalist visions as belonging to a form of social democracy which as a historical form of capitalism has only survived through its ability to “hunt and feed on the periphery”. In other words, as an imperialist project dependent upon the transfer of value from South to North, producing uneven development and cementing Southern subordination within the global capitalist economy.

Writing in this journal on the changing forms of 21st century imperialism, Jayati Ghosh (2021, 10) noted:

> A major feature of our times is the privatisation of much of what were, until recently, generally accepted as basic responsibilities of public provision. Basic amenities like electricity, water and transportation infrastructure, and social services like health, sanitation and education all fall into this category…. the fact that provision is no longer necessarily in the public domain, and that private provision is increasingly seen as the norm, has opened up huge new markets for potentially profit-making activity…. This is a more complicated expression of the imperialistic drive for control over economic territory than the direct annexation of geographic territory, but that does not make it any less consequential.

In this context, the term 'green imperialism' is adopted in this article to denote the ways in which large capital and hegemonic powers seek to control and generate profit from economic territory outside their national borders under the discursive banner of 'greening' the global economy (irrespective of how green or otherwise this process might be).[1] This takes place through the long-established extraction of cheap primary commodities located in the global South and required for the manufacture of renewable energy and other clean technologies, in the form of critical transition metals and minerals (Bainton et al. 2021), alongside the more contemporary form of "new frontiers of electricity capital" (Baker 2023) seeking to generate profit from the expansion of renewable energy across the global South itself. Green imperialism, then, points to the specificities of contemporary imperialism within the context of the hoped-for global transition towards low-carbon economies and societies in the coming decades.

The DRC provides a modern exemplar of green imperialist dynamics in action, with hegemonic powers seeking to position the Congolese economy as an exporter of low-cost, low-carbon metals and an open market for the entry of renewable energy finance and technologies. Copper, cobalt, and lithium are three critical low-carbon metals due to their use in a range of green technologies in the energy and transport sectors, including for cobalt as a core element in electric batteries. The DRC is home to one of the world's largest lithium deposits and in 2022 accounted for 10 percent of world copper production and 68 percent of world cobalt production. As of 2022, the country held 48 percent of known world cobalt reserves (US Geological Survey 2023).

Alongside its strategic importance as a supplier of critical low-carbon metals, the DRC is home to an attractive domestic market for the rollout of renewable energy finance and technologies. With one of the lowest electricity access rates in the world at around 16 percent of its approximately 90 million population (DRC Ministry of Energy 2017), and having recently liberalised its energy sector in 2014, the DRC's potential for foreign renewable energy firms and investors seeking profitable new markets is considerable. Hailed by one British energy firm as "possibly the best pay-go solar market in the world" (BBoxx 2018, 1), the DRC hosts an estimated $1 billion market for the deployment of mini-grid and off-grid solar technologies alone (African Development Bank 2017). The DRC is also home to 13 percent of global hydropower potential (African Development Bank 2020).

The line of argument developed in this article draws on and corroborates Atul Kohli's recently proposed thesis on the relationship between imperialism, sovereignty, and development, born out of his historical study into the drivers and effects of British imperialism in the 19th century and US imperialism in the 20th century. Trained in the positivist school of US political science, Kohli's (2020) latest book, *Imperialism and the Developing World*, nonetheless aligns with the tradition of Marxist scholarship on imperialism, dating back to Hobson (1902), Luxemburg (1913), Lenin (1917) and others, in positing the idea that capitalism (or what Kohli more often refers to as 'economic interests') is the main driver of imperialist expansion. While this lays it open to the critique of offering a mono-causal theory of imperialism, confining the phenomenon primarily to economic interests (Apata 2022), it nonetheless offers a compelling account of how the economic interests of hegemonic powers manifest themselves as causal drivers of imperialist expansion. Of most relevance here, Kohli's theory of imperialism can be usefully deployed to help illuminate and structure an analysis of the contemporary form of green imperialism in the DRC during the opening decades of the 21st century.

The first component of Kohli's thesis is that imperialism is motivated by the needs of hegemonic powers to enhance their national economic interests, which they achieve by undermining sovereignty in peripheral countries and establishing open economic access. In support of this thesis, the first section of the article documents how green imperialism in the DRC is predicated upon the dismantling of Congolese sovereign ownership and control over its natural resource wealth (in this instance not only low-carbon metals but also water and sunlight) and establishing open access to the Congolese economy, so as to advance the green economic agendas of hegemonic powers.

The second component of Kohli's thesis is that while national sovereignty is not sufficient to put a country on a path of progress, it is often a necessary precondition, and therefore the undermining of sovereignty imposed by imperialist powers simultaneously undermines the prospects of prosperity in countries at the global periphery. Here, and providing further support to Kohli's thesis, the second section of the article demonstrates that the political response to green imperialism in the DRC, while offering some resistance, nonetheless functions to reproduce a model of national development that historically has delivered little by way of material improvements for most Congolese.

Green Imperialism

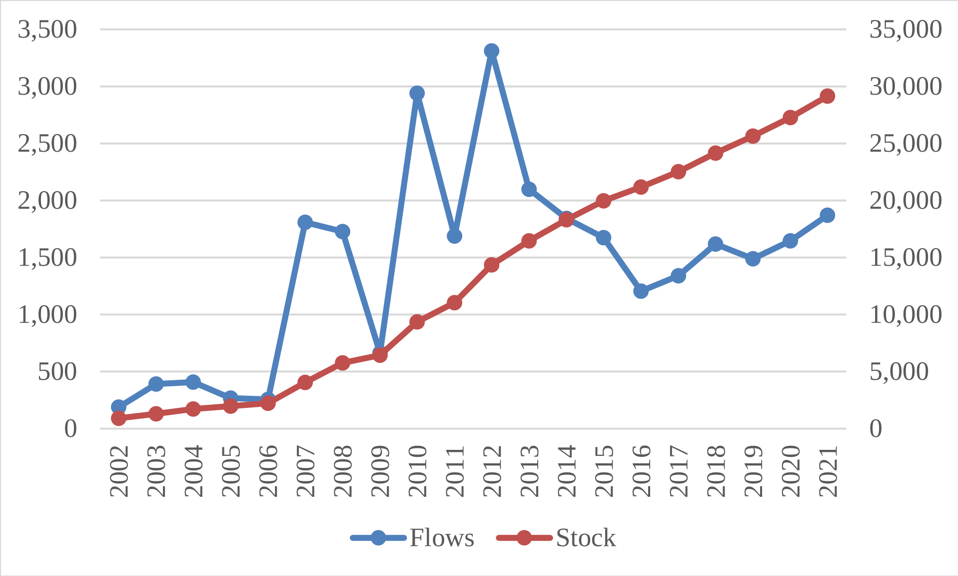
While the origins of imperialist penetration in the DRC can be traced back to the Congo Free State (1885-1908) and the Belgian Congo (1908-1960), the process for maintaining open economic access to the country as a means to further green imperialist agendas in the 21st century has more recent origins. Shortly after the official end of the Congo Wars (1996-2002), in July 2002, the DRC's first new Mining Code since 1981 was passed. This was introduced as one of a raft of reforms drafted with the International Monetary Fund (IMF) and the World Bank's close supervision as part of an overall effort to instil a neoliberal regime at the heart of the DRC post-war polity (Moshonas 2013), with Northern donors playing a supporting role (Marriage 2010).

Working "in close collaboration with a Congolese committee on the drafting of the mining law" (Mazalto 2008, 58), the World Bank blamed mining sector decline on "poor governance" under the Zairian state (Rubbers 2010, 330), as opposed to considering the weight of external shocks in the form of the copper price collapse and the oil price hike of the 1970s. Reform was then driven by the World Bank's maxim that "Zaire must be less, but better governed" (World Bank 1994, cited in Mazalto 2008, 57). Consequently, the 2002

Code moved to privatise state-owned mining enterprises and attract fresh foreign investment by offering a generously liberal tax and customs regime – one of the most liberal on the continent at the time (Marriage 2018) – including tax holidays and exemptions and low royalty rates. Much later, in 2015, the IMF DRC Head of Mission would comment that “the 2002 Mining Code is too generous, so much so that the state captures very little in the end” (Lukusa 2016, 156). While the current Congolese Mining Code, passed in March 2018, has attempted to redress some of these neoliberal excesses (discussed in the next section), the overall model of ceding ownership and control of the mining sector to foreign corporations remains intact.

Between 2002 and 2021, foreign direct investment (FDI) inflows to the DRC increased from $188 million to $1.9 billion and FDI stocks rose from $907 million to $29.1 billion (Figure 1), or from 10 percent to 57 percent of GDP. Fresh foreign investment has been heavily focused on mining. From 2004 to 2022, the official annual exports of copper and cobalt increased more than 300-fold and more than 80-fold respectively, from 7,689 tons to 2.4 million tons in the case of copper and from 1,412 tons to 115,371 tons for cobalt.[2] At the time of writing, the Manono lithium deposit, heralded as one of the world’s largest, is being developed under the majority-ownership of the Australian mining company AVZ Minerals.

Figure 1 FDI inflows and stock to the DRC, 2002 to 2021 (in millions of current USD)



Source: UNCTADstat database.

A brief look at who controls the DRC's cobalt production – the most critical of the country's transition metals – makes clear the near complete ceding of Congolese resource sovereignty to foreign mining corporates. In 2021, six transnational mining corporations held majority ownership of cobalt projects that accounted for 90 percent of production in the DRC, equating to more than half of world supply for that year (Table 1). Electric battery manufacturers are scrambling to secure access to this production, placing these mining corporates in a powerful position.

Table 1 Cobalt production in the DRC, 2021

Firm	Nationality	Project(s)	Production	
			Tons	%
Glencore	Swiss	Kamoto, Mutanda	27,700	30
Eurasian Resources Group	Kazakh	Metalkol	20,718	22
CMOC	Chinese	Tenke Fungurume	18,501	20
Pengxin International Mining	Chinese	Shituru	7,000	8
Zhejiang Huayou Cobalt	Chinese	Luiswishi	5,390	6
Jinchuan Group	Chinese	Ruashi	4,400	5
Other	-	-	9,302	10
Total			93,011	100

Sources: DRC Ministry of Mines Statistics, company reports.

Glencore, the largest cobalt producer in the DRC and globally, provides an illustrative case. In May 2019, Umicore – a Belgian corporation specialising in the development of cathode materials for battery cells, with processing plants in China, the US, Finland, and Belgium – signed a cobalt supply deal with Glencore for up to 12,000 tonnes per year. Shortly after, in June 2020, Elon Musk's electric car firm Tesla secured a deal to source up to 6,000 tons of Glencore's cobalt per year to supply its Chinese and German factories. Glencore also has agreements with Chinese battery manufacturers GEM and CATL.

In the inter-imperialist rivalry between the US and China, the US is greatly concerned by China's dominant position in the control of Congolese cobalt production. With most Congolese cobalt exported to China and around 50 percent of global cobalt refining taking place in China (Bernards 2021, 549), US efforts to secure its cobalt supply chain have stepped up considerably over the last several years. Most recently, in July 2023, the Chairman of the US House Subcommittee on Africa, Representative John James of Michigan, introduced a bill requiring the creation of a US national strategy to secure supply chains involving critical minerals from the DRC. The press release accompanying the bill's introduction noted:

> The DRC's critical minerals are required not just for US industrial production but also for national security purposes – it is essential for fighter jet parts, precision munitions, and stealth technology. Currently, China operates 15 of the 19 cobalt producing mines in the DRC, which has created dominance for the Chinese Communist Party over global critical mineral supply chains *which directly harms US strategic interests*. As a result of this supply chain reality … it is imperative that the United States increases its engagement in the country [emphasis added].[3]

The US is not alone in this concern, with most other countries and regional economic blocs in the global North – including the EU and the UK – implementing recently published critical minerals strategies designed to secure their access to those minerals deemed crucial both for national security as well as for intended transitions to low-carbon capitalism.

As with mining, the process to dismantle a nationalised energy sector, a sector which since the 1970s had been led by *Société Nationale d'Électricité* (SNEL), began in the 2000s shortly after the DRC had emerged from the Congo Wars. In June 2008, the EU Energy Initiative contracted Mercados Energy Markets International, based in Madrid, to develop a new energy policy for the DRC based on the principles of "electricity sector liberalisation … [and] the creation of an attractive economic climate for investments" (EU Energy Initiative 2008, 2). The country's resultant electricity liberalisation law, introduced in June 2014, adhered closely to these principles. Article 1 declared the liberalisation of the sector in a shift towards public-private partnerships, and Article 80 guaranteed that any private investor can be the owner of an independent electricity project.[4]

Three years later, in 2017, the World Bank approved the $147 million, seven-year *DRC Electricity Access & Services Expansion* project. Alongside upgrading and expanding access in SNEL service areas, the project aims to promote private sector access expansion by providing debt and grant support to renewable projects, and by strengthening the implementation of key provisions of the 2014 liberalisation law seen as critical for expanding private sector participation in the sector.[5] This was followed, in 2022, by a $939 million, eight-year World Bank governance and reform project for energy and water. The two largest components of the project, together accounting for $819 million of the project total (or 87 percent), are "private sector-based access expansion" at $579 million and "public sector-based access expansion with private sector involvement” at $240 million (World Bank 2022, 13).[6]

While for the World Bank (2020, 2), more can still be done by way of tax breaks and subsidies to attract foreign energy investors to the DRC, investment has nonetheless been forthcoming. In hydro, the main focus is on generating export revenue through the development of Inga III on the Congo River, which at an estimated 40 gigawatts capacity has the potential to become the world’s largest hydropower plant. Requiring an estimated $14 billion of investment, current investors include the Chinese state-owned China Three Gorges Corporation, the Australian group Fortescue Metals Group, and German investors (Jeune Afrique 2020). While Inga III has been subject to much institutional inertia and delay (Congo Research Group and Resource Matters 2019), solar has seen considerably more movement. The solar projects signed onboard during the first term of the Tshisekedi administration are summarised in Table 2 below, the largest of which is the planned construction of a 600-megawatt solar photovoltaic plant in Kinshasa, through an anticipated $1 billion investment from US transnational The Sandi Group. Here, in contrast to China’s hold on cobalt production, Northern firms and finance predominate, reflecting the dominant role North American and European firms have played in solar expansion across Africa over the last decade (Cross and Neumark 2022).

Table 2 Solar projects in the DRC, 2019-2023

Year	Major Firm	Nationality	Project
2019	CAT Projects	Australian	$52 million plant in Kisangani
2020	Bboxx	British	Solar home systems to 10 million by 2024
2020	Sandi Group	US	$1 billion, 600MW plant in Kinshasa
2021	Gridworks	British	$100 million solar-hybrid plants to 500,000 people
2021	Green Power Capital	US	$300 million, two 100MW plants
2022	World Bank	n/a	$400 million for solar mini-grid investments
2023	Nuru	DRC	Seeking $300 million to reach five million by 2024

Sources: Media reports, government press releases, and company statements.

Private finance has been supplemented in many instances by development finance such as British International Investment (2021), the development finance institution of the UK government, which is providing debt finance to the $100 million solar hybrid Gridworks project, alongside the potential interest of the Private Infrastructure Development Group, a private finance collective funded by six governments (the UK, the Netherlands, Switzerland, Australia, Sweden, and Germany), and the World Bank's International Finance Cooperation.

Here, the imperialist dimension is not only that the DRC is being pressed into a subordinate position exporting cheap raw materials for the manufacture or renewable and other clean technologies and importing expensive finished goods in the form of these same technologies, but that the process of solar expansion is being converted into an asset stream for finance capital through the deployment of the 'pay-as-you-go' (PAYGO) system, which has enabled low-income households to purchase solar home systems through a range of flexible, digital payment methods (Baker 2023). This is, for example, the energy delivery model used by British firm Bboxx, hoping to reach 10 million Congolese with solar home systems in the coming years. In some areas, Bboxx is also renting out televisions alongside its off-grid solar systems, offering rural Congolese households a combined offer of access to solar alongside more than 100 channels on French-owned provider Canal+ (Solar Quarter 2022).

Through the development of a PAYGO delivery model to increase the market for its energy and other products, the off-grid solar sector has now become part of the financial technology (or fin-tech) industry that has served in the realm of mobile money to enrich fin-tech firms and shareholders. As Bateman et al. (2019, 490) concluded in an earlier article in this journal, based on a detailed case study of M-Pesa in Kenya, "fin-tech is very clearly designed to hoover up value and deposit it into the hands of a narrow global digital-financial elite that are the main forces behind the fin-tech revolution". The DRC's large market for solar expansion has been attracting considerable interest from this same digital-financial elite, as testified by the range of Northern-financed, profit-seeking solar investments that have entered the country following energy sector liberalisation.

Taken together, these dynamics mirror the forced integration of the DRC into the global capitalist economy at the end of the 19th century and which continued throughout the 20th century with the DRC "linked to the Occident in a neo-colonial relation insofar as it remains a simple supplier of raw materials and importer of manufactured goods" (Kabongo 1999, 414). It has been achieved, in line with Kohli's (2020) thesis, by undermining Congolese sovereignty through the post-war liberalisation of the DRC's mining and energy sectors and by establishing open access to the Congolese economy for the extraction of low-cost, low-carbon metals and the entry of renewable energy finance and technology, as competing hegemonic powers – most notably China, the US, and Europe – seek to advance their green economic agendas and interests.

Sovereignty and the Quest for National Development

Under Joseph Kabila's administration (2001-2019), national economic development was premised upon leveraging the DRC's comparative advantage in minerals and metals, with the mining sector seen as "capable of realising the government's vision to make the DRC an emerging country by 2030 and a global power by 2060" (DRC Ministry of Mines 2017, 2). This has continued into the Tshisekedi administration, where the underlying logic is well summarised in the country's *National Strategic Development Plan 2019-2023*, adopted shortly after Tshisekedi's arrival in office:

> "…the extractive and agricultural sectors are thus considered as the two main productive sectors which, with deepened value chains, will found the Congolese economy at the first stage of its sequential evolution towards an inclusive growth economy. These sectors will have a knock-on effect on other sectors, such as industry, commerce and tourism" (DRC Government 2019, 2-3).

There has however been some change within this overall pattern of continuity, with state officials over the last several years undertaking efforts to resist imperial encroachment and reassert a greater degree of sovereign ownership and control over the country's mineral wealth.

These efforts began under the Kabila administration with the adoption of a new Mining Code on 9 March 2018. This marked the end of a six-year battle between the Congolese government and foreign mining corporates, the latter of whom had bitterly resisted any effort to increase taxes and royalty rates, including through a series of public statements alongside arbitration and mine closure threats. Congolese state officials held their ground, however, and many of the desired changes went through (Reuters 2018). Most prominent among these were the designation of cobalt as a strategic mineral, subjecting it to a 10 percent royalty rate (up from two percent), the increase of state ownership in all licensed mining firms from five percent to 10 percent, and the introduction of a 50 percent windfalls profit tax.

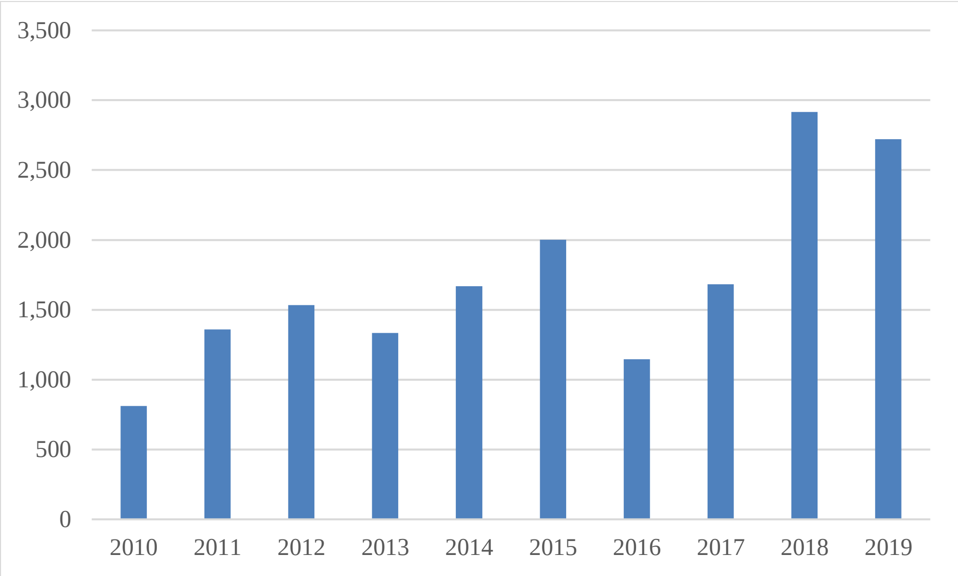
Next, in November 2019, and now under the Presidency of Felix Tshisekedi, the Congolese government established the state-owned *Entreprise Générale du Cobalt* (EGC). EGC was swiftly designated with the sole authority to buy and export all artisanal and small-scale (ASM) cobalt (Deberdt 2021), which accounts for an estimated 5 to 15 percent of total cobalt production in the DRC. Formed partly as a response to growing concerns around labour and human rights issues in ASM cobalt mining (see, e.g., Amnesty International 2016), EGC's founding also marked an attempt to wrest control over the processing and export of ASM cobalt from a range of foreign-owned refineries (BGR 2021). In October 2020, EGC entered into a five-year agreement to sell its cobalt to Swiss commodity trader Trafigura in return for an initial $60 million of financing (Bloomberg 2021), although the new state entity continues to face liquidity challenges and remains largely inactive at the time of writing.

Third, at the DRC Africa Business Forum held in Kinshasa in November 2021, a group of Congolese ministers unveiled government plans to move up the estimated $8.8 trillion electric vehicle battery value chain from mineral exploitation to transformation and eventually to the domestic manufacture and export of batteries. These plans were further solidified in May 2022, when the Congolese and Zambian governments signed a memorandum of understanding to create a regional African value chain for the production of batteries and electric vehicles (UN Economic Commission for Africa 2021, Afrik21 2022). Fourth and finally, most recently, in May 2023, President Tshisekedi undertook a state visit to China, seeking among other issues to gain majority ownership over Sicomines, a copper and cobalt joint venture in which Chinese firms hold 68 percent of the equity and which the Tshisekedi administration believes – among other issues – was significantly undervalued at the time of its signing back in 2008 (The Continent 2023).

Yet despite these efforts and ambitions, there is little evidence from post-independence attempts at mining-led industrialisation in the DRC to create much cause for optimism, and even less from the last two decades of pursuing this national development strategy in the context of a 21st century foreign corporate-owned mining landscape. Despite helping deliver sustained high GDP growth rates throughout the Kabila administration, mining sector growth failed to translate into greater household income, poverty reduction, the emergence of domestic industry, or significantly improved wages and conditions for most workers (Marysse 2015, Otchia 2015, Lukusa 2016, Marivoet et al. 2019, Radley 2020a, 2020b). In 2019, at the end of seven decades of efforts to diversify and structurally transform the productive base of the Congolese economy through mining-led industrialisation, 93 percent of total national exports derived from just three metal commodities: copper (57 percent), cobalt (28 percent), and gold (eight percent) (EITI 2021, 260). While domestic forms of ownership and control should help staunch the overseas syphoning of value associated with foreign investment to the DRC's mining sector (Trapido 2015), the structural constraints of price volatility, enclavity, and low labour absorption greatly restrict the ability of mining industrialisation to stimulate broader based processes of economic development in the DRC, irrespective of ownership and management structures (Radley 2023).

It could reasonably be countered to all this that cobalt provides an exceptional and unprecedented opportunity to overturn this dismal historical record, given the likely sustained demand and the high level of known world reserves located in the DRC. Offering tentative support to this, there is some early evidence to suggest the new Mining Code has delivered significantly increased fiscal revenue for the Congolese state and therefore, in theory, increased financing for productive reinvestment in the domestic economy. Total revenue generated by the extractive industries in 2018 and 2019, the first two years after the adoption of the Code, was recorded at $2.9 billion and $2.7 billion respectively, up from an annual period average of $1.3 billion between 2010 and 2017 (Figure 2). Increases in production levels alone fail to account for the scale of this change, which also took place despite a crash in the price of cobalt and a steadily declining copper price across the two-year period immediately following the Code's adoption, suggesting the new fiscal dispensations enshrined in the 2018 Code might be a significant driver of the rise in revenue.

Figure 2 DRC extractive industry government revenue, 2010 to 2019 (in millions of current USD)



Source: EITI database and country reports.

Yet, and potentially more constraining than the industrial challenges of seeking to move as a late entrant into an electric battery value chain already dominated by early movers in Asia, North America, and Europe, or efforts in the global North to increase domestic cobalt production, green technology manufacturers are moving to reduce or eliminate the use of cobalt in many of their products. This is largely motivated by the desire of foreign corporations to reduce their dependence on the DRC due to perceived political volatility and the reputational damage they incur sourcing cobalt from a country where its production has potentially been associated with human and labour rights abuses, including child labour (Amnesty 2016).

Current commercial cathodes used in electrical vehicle batteries, for example – the major driver of cobalt demand and where cobalt is the most expensive material in the product –

contain 15 to 20 percent cobalt, down from 60 percent in the first generation of lithium-ion batteries, and the industry is actively developing 10 percent cobalt cathodes (US Energy Department 2019). Many electric vehicle manufacturers, such as Tesla, are already using cobalt-free batteries, and in March 2023, a team of US-based chemical engineers generated much media interest after they published a paper claiming metal-free, water-based battery electrodes have up to 1,000 percent more energy storage capacity than existing metal-based alternatives (Ma et al., 2023).

Whether or not this latest research ends up revolutionising the battery industry, it is indicative of a green technological frontier related to the use of cobalt that is advancing rapidly. The medium- to long-term dependence of the global economy on Congolese cobalt as a critical low-carbon metal is far from certain. Here, the DRC once more forcefully confronts the limits and vulnerabilities of seeking national development and prosperity on the subordinate terms set for it by imperial powers: via deeper integration into the global capitalist economy as an exporter of primary commodities. The precarity of long-term development planning and industrial strategy based on the sale of a commodity whose demand lies beyond national control is readily apparent in the case of Congolese cobalt, even more so where any regulatory attempt to increase its price will only serve to further motivate and accelerate industry efforts to reduce or eliminate its use in final products.

While acknowledging the limits of a national development strategy in the DRC founded upon the foreign-owned corporate extraction of low-carbon metals, it might be countered that the expansion of renewable energy nonetheless introduces a new dynamic, improving the welfare of millions of Congolese by delivering access to modern forms of energy, while driving transformative economic development in the process. This is generally the assumption underpinning development institutions and agencies promoting renewable energy expansion in energy-poor regions across the global South (see, e.g., USAID 2015, African Energy Commission 2019), and a techno-optimist strand of social science literature investigating the effects of this expansion (see, e.g., Smith and Urpelainen 2014, Comello et al. 2017).

Theoretically, this line of thinking can be traced to New Institutional Economics (NIE), where economic development is conceptualised as being held back by market barriers. Once these barriers are removed, individuals can “use their rational perceptions ... to navigate transactions and make the most profitable decisions – aggregating to generate economic growth” (Perry 2019, 4-5). For NIE proponents, liberation technologies – such as solar power – can “level the playing field” by allowing poor countries and households to participate more fully in the global economy (Mann and Iazzolino 2019, 1). Yet notably, techno-optimist claims about the potential of renewable energy expansion in the global South to drive economic development are often either unsubstantiated or based on references to historic experiences of electrification in the global North (Radley and Lehmann-Grube 2022). Moreover, evidence for increased electrification rates as a causal driver of economic development is far from compelling (Stern et al. 2017).

To return to the case of solar expansion in the DRC, of particular importance is that this expansion is taking place within an overall shift from energy being delivered as a centralised, state-led public good to a decentralised and privatised for-profit commodity. Alongside issues of energy quality, reliability, and affordability associated with this new delivery model (Cross and Neumark 2022, Radley and Lehmann-Grube 2022), several studies have noted that private energy firms do not always assume the maintenance of off-grid solar systems and the cost of this maintenance can often surpass what rural households or communities can afford

(Laufer and Schäfer 2011, Dauenhauer et al. 2020, Samarakoon 2020, Sarker et al. 2020). It remains to be seen who in the DRC will assume the financial burden of maintenance and repair within the market-led, off-grid delivery model driving expanded access to solar in the country, beyond an initial guarantee period, but the potential for this model to privatise profits and socialise losses, especially in relation to solar home systems and rural community mini-grids, looms large.

In addition, where studies have noted the recent emergence of the PAYGO model discussed in the previous section, this development has generally been uncritically celebrated for its potential to deliver solar energy products to income-poor rural households unable to afford the full upfront cost (GSMA 2016, ODI 2016, Adwek et al. 2020, Bisaga et al. 2020). Yet, to return once more to the study of Bateman et al. (2019), the mobile money platform M-Pesa in Kenya was found to be associated with rising over-indebtedness and other issues that constrain rather than liberate fin-tech users. It is partly for this reason that Baker (2023, 207) questions the poverty-reducing potential of off-grid PAYGO solar, highlighting instead how the system threatens to function as “a conduit for consumer debt”. As both Radley and Lehmann-Grube (2022) and Baker (2023) have noted, the implications of this recent development in the solar industry for individuals and households seeking pathways out of poverty, both in the DRC and further afield, are yet to be fully explored.

Conclusion

In alignment with Kohli’s thesis, green imperialism in the DRC has involved the dismantling of Congolese sovereign ownership and control over its natural resource wealth (water and sunlight alongside low-carbon metals) and establishing open access to the Congolese economy. While helping to advance the green economic agendas of hegemonic powers by securing them access to low-cost, low-carbon metals and a market for the entry of renewable energy finance and technologies, the political response to green imperialism in the DRC appears to be reproducing a model of mining-led national development that historically has delivered little by way of material improvements for most Congolese, thus undermining the prospects of prosperity in the country. Albeit this time around with the possibility of expanded access for some to renewable forms of energy as a foreign-owned private commodity, and all the limitations and contradictions this new model of energy delivery entails.

Moreover, as the Congolese state claims a greater share of revenues from the export of cobalt, copper, and (potentially in the next several years) lithium, it becomes materially more reliant on these same exports, further constraining the space for a shift in national development strategy. Yet as Lawrence (2023, 526) notes in the previous issue to this journal, “there have always been alternatives open to African governments”. One of these is Samir Amin’s (1990) strategy of ‘delinking’, proposed as a means to conceptualise how national sovereign development projects in the global periphery might best be promoted. The strategy centres around breaking from the demands imposed by the external global economy and reorienting strategy and policy towards serving domestic demand and promoting popular development, grounded in an understanding of the needs and interests of workers and peasants (Kvangraven et al. 2021).

In what transpired to be his final year before his eventual passing in 2018, Amin emphasised that delinking was not intended as a blueprint, but highlighted nonetheless that industrialisation for the mass production of domestic goods, the revival of peasant agriculture, and (re)asserting sovereign control over productive activity and economic policy would all constitute core elements of a delinking agenda (Zeilig 2017). The spirit and ultimate objective of delinking is perhaps best captured in Amin's following comment on the problem with World Bank-driven structural adjustment:

> … it is requested that the Congo adjust to the needs of the US, not for the US to adjust to the needs of Congo. So, it's that adjustment, which is simply one side adjusting. Now, delinking means you reject that logic, and therefore you try to, and succeed, as far as you can, to have your own strategy, independent of the trends of the unequal global system (Ibid.).

At the current juncture, several months out from Presidential elections in December 2023, the Tshisekedi administration has been firmly embracing rather than rejecting the logic imposed upon the DRC by the low-carbon capitalist visions emanating from the global economy. The majority of Congolese, it has been argued in this article, will likely fail to reap any tangible benefit or improvement from such a stance.

What possibility, then, that electoral change might lead to new forms of national political power interacting differently with the international economic forces swirling around the supposed greening of the global economy? In March 2023, President Tshisekedi named Jean-Pierre Bemba as Vice Prime Minister of Defense and Vital Kamerhe as Vice Prime Minister of the Economy. In doing so, he greatly strengthened his own candidacy by co-opting two of the DRC's major political heavyweights, both with large constituencies, onto his presidential ticket. This, alongside Tshisekedi's control of key electoral institutions, will make it difficult for any opposition candidate – among whom feature Augustin Matata Ponyo (a former Prime Minister under Joseph Kabila), Moise Katumbi (a businessman and former Governor of Katanga Province), and Martin Fayulu (a former ExxonMobil executive, National MP, and Presidential candidate in 2018) – to mount a successful bid for the Presidency.

Taking a more long-run perspective, serious efforts to construct a sovereign national development project in the DRC have historically been met with interference and obstruction by imperial powers with vested interests in maintaining open access to the Congolese economy on favourable terms. This history runs from the US- and Belgian-backed assassination of nationalist leader and former Congolese Prime Minister Patrice Lumumba on 17 January 1961, through to the immediate support and backing provided by the US, UK, Belgium, France and others for the official presidential elections results in 2011 and 2018, despite well-documented irregularities and electoral fraud. In both instances, hegemonic powers preferred the incumbency of candidates showing little inclination towards the construction of a sovereign national project, and thus deemed more likely to help them maintain open access to the Congolese economy, than more threatening alternatives. This was certainly the case with veteran opposition leader Etienne Tshisekedi in 2011, and to some extent with Martin Fayulu in 2018, who was building at the time a reputation as Etienne Tshisekedi's potential political successor, having indicated his desire to revisit mining contracts and the country's relations with foreign investors more generally if elected to the Presidency.

Despite all of this, it must not be forgotten amidst the controversies around the presidential election of Felix Tshisekedi that the removal of his predecessor Joseph Kabila in 2019 was the culmination of a long battle fought and won by tens if not hundreds of thousands of Congolese who took to the streets at various moments in the years leading up to the election – both in Kinshasa and elsewhere across the country – to protest against Kabila's many attempts to maintain his grip on power, too many of whom paid the ultimate sacrifice through loss of life. If the pursuit of an alternative, anti-imperialist national development project is to emerge in the DRC, it will only be through the route of such struggle and the popular demands imposed upon the country's political leadership. It would be unwise to rule out the 2023 elections as another focal point around which such struggle and demands will continue to build and take hold.

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