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Carsten Elsner, Manuel Neumann, Franziska Müller, Simone Claar

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Abstract

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Room for money or manoeuvre? How green financialization and de-risking shape Zambia's renewable energy transition

Carsten Elsner^a, Manuel Neumann^a, Franziska Müller^b and Simone Claar ^a

^aFaculty of Social Sciences – Globalization and Politics, University of Kassel, Kassel, Germany; ^bFaculty of Business and Social Sciences, Ringgold Standard Institution – Political Science, Hamburg University of Applied Sciences, Hamburg, Germany

ABSTRACT

SDG-backed green finance efforts have become popular vehicles for private investors to participate in development collaborations. We critically examine two transnational renewable energy projects in Zambia, drawing on the financialization literature and, particularly, the concept of de-risking. We find that new public–private partnership coalitions impose a global market and financial logic on the Zambian energy sector and its customers. While this development may attract transnational investment into renewables, we argue that it also sidelines smaller Zambian businesses and financializes the daily life of Zambian citizens. This paper, thus, provides critical scholarly insights into the greening of contemporary development practices.

RÉSUMÉ

Les tentatives de finance écologique basées sur des objectifs de développement durable (ODD) sont aujourd'hui une méthode populaire pour les investisseurs privés voulant participer à des collaborations de développement. Nous portons un œil critique sur deux projets transnationaux d'énergie renouvelable en Zambie, en nous basant sur la recherche liée au concept de financialisation et, plus particulièrement, au concept de diminution des risques. Notre étude révèle que les nouvelles coalitions de partenariats public/privé imposent au secteur énergétique Zambien et à ses clients un marché mondial, ainsi qu'une logique financière. Bien que ce type de développement permette d'attirer des investissements transnationaux favorisant les énergies renouvelables, nous estimons qu'il marginalise les petites entreprises Zambiennes et financialise la vie quotidienne des Zambiens. Cet article offre de ce fait une perspective critique sur l'écologisation des pratiques de développement contemporaines.

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Green finance; SDGs; energy transition; Zambia; financialization

Introduction

In 2015, the Sustainable Development Goals (SDGs) from the United Nations General Assembly set a game-changing agenda which, given the USD\$7 trillion needed in

CONTACT Manuel Neumann  mneumann@uni-kassel.de

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investment by 2030 (Rowden 2019, 6), can only succeed with the support of private capital. This has fundamental implications for the shape and structure of development finance. Green funds, green bonds, and a market-enabling policy framework based on de-risking promising green economies-to-be, form part of the emerging green investment regime (Gabor 2019; Bracking 2019; Schmidt and Matthews 2018; Isakson 2015; Banga 2018; IRENA 2016).

Critical finance research considers these developments as a move from the “Washington Consensus” towards the “Wall Street Consensus”, that is, a kind of paradigm shift that mobilizes private capital in hitherto unseen ways introduces the logics of bankability and, more generally, contributes to a financialization of development cooperation. These tendencies are particularly visible at the energy/development nexus (Müller 2017, 306; Baltruszewicz et al. 2021). Zambia along with several “first-movers” on the African continent, including Rwanda, South Africa, Uganda, and the Economic Community of West African States (ECOWAS) region has adopted policy legislations that foster the introduction of auction instruments, de-risking tools and investor-to-state dispute settlements. Altogether, these policy changes result in the restructuring of their previously nascent renewable energy (RE) economies as preferable destinations for green investment (Müller et al. 2020; Claar 2020; Sweerts, Longa, and van der Zwaan 2019). Contributing to debates on the political economy of energy and on the financialization of development practice (Gabor 2019; Bracking 2019; Rowden 2019), we want to know how this new development consensus affects Zambia’s energy transition endeavours. While we witness similar developments in several countries (Haag and Müller 2019, 68),¹ Zambia serves as a protruding example, with certain political and economic factors coalescing to an environment especially prone to external development interventions: fragile energy institutions (Whitworth 2015; Kapika and Eberhard 2013), historical dependency on development finance and resource extractivism (Ferguson 1999; Adam, Collier, and Gondwe 2014), an increasing energy demand as well as auspicious yet unexploited geophysical conditions for renewable energy (Whitworth 2015; Kapika and Eberhard 2013). Currently, Zambia ranks 4th among African countries in relation to Official Development Finance earmarked for RE development (OECD 2019, 40) and is facing a high amount of foreign debt in comparison to other African states (The Guardian 2020). Taken together, the political economy of renewable energy in Zambia illustrates a vivid account of financialization processes capturing the political and financial sovereignty over green transformations.

However, the roll-out of green finance flows to developing countries’ RE markets comes at a price: We demonstrate this by concentrating on two major energy programmes – Global Energy Transfer Feed-in Tariffs (GETFiT) and the Beyond-the-grid Fund (BGFZ) – which have both been orchestrated by transnational companies and Western development agencies. These programmes are scalable, and aim to expand to several African countries, such as Ghana, Mozambique, Namibia and Tanzania (Haag and Müller 2019). The Zambian case can therefore demonstrate how green financialization and de-risking reshape green transition processes. Our research is based on 38 semi-structured expert interviews (see Appendix) with government officials, representatives of business organizations and development cooperation agencies, which were conducted during field research in Zambia in 2015, 2018 and 2019. Drawing on debates of financialization both from a macro and micro level analysis (Mawdsley 2016; Asiyambi 2017), we

explore how financialization unfolds at the energy/development nexus in the case of Zambia. We detected two forms of financialization, (1) on a macro level, referring to the design and conditionalities of development finance in the on-grid RE sector, and (2) on a micro level, referring to the effects of this trend on “daily life”, i.e. how consumers and prosumers, who participate in off-grid RE projects are incorporated into the logics of green capital. Our findings suggest that though both tendencies may be highly efficient in paving the way towards a green transformation in line with SDG7 “Ensure access to affordable, reliable, sustainable and modern energy for all”, they bear controversial potential, inasmuch as they cherish transnational stakeholder agency whilst downgrading domestic political agency and side-lining the role of local capital. Rather than encouraging domestic alternatives, these endeavours, thus, likely underpin the dependence on foreign donors. Additionally, financial logics are entrenched in hitherto untouched domains of daily life. This may result in functional norms, such as scalability and bankability gaining precedence over calls for energy justice, its affordability and equitable access, thereby financializing and “rendering technical” (Li 2007, 265) the course of a renewable energy transition. Overall, our data sheds light on current financializing trends in developing economies’ RE sectors and – given the intended scalability of GETFiT and the BGFZ – allows a generalization for other emerging economies of renewable energy. Doing so, our research contributes to the wider debate on emerging green economies, with specific regard to green financialization, repercussions of macro and micro-level financialization, and de-risking strategies. The article will begin by reviewing pertinent literature on the financialization of development, before contextualizing the energy development efforts in Zambia. Thereafter, the two projects under scrutiny will be presented. The ensuing discussion will critically assess our findings and its wider implications.

Financializing energy transitions: theoretical contexts

In 2015, the SDGs set an ambitious agenda for eradicating poverty and fostering a socio-ecological transformation; their successful implementation, however, hinges on an equally ambitious transformation of financial mechanisms. In this vein, public and private donor capital is “blended” and new financial tools and programmes created to drive such a process. Indicative of this trend is the World Bank’s “Maximizing Finance for Development” Action Agenda (World Bank Group 2020a), which aligns the global public donor institutions and aims at mobilizing billions of dollars in public resources, only to unleash trillions in private finance (Rowden 2019, 4). Gabor (2021) considers development finance an emerging policy paradigm that reframes the Washington Consensus on development in the language of the Sustainable Development Goals and identifies global finance as *the* critical actor to achieving the SDGs. Coined the “Wall Street Consensus”, this paradigm shift resembles an “effort to reorganize development interventions around questions of ‘how to sell development finance to the market’” (Gabor 2021, 3), which is accompanied by a shift in values – from poverty eradication to risk eradication – as in an agenda that prioritizes economic growth over poverty eradication. Any risk that may prevent economic growth is now considered a major danger that needs to be tackled by political, fiscal, and economic means. This is, why the concept of “de-risking” has entered the stage, namely based on a research partnership between

UNDP and Deutsche Bank's research division, "Climate Chance Advisors" between 2010 and 2013 (Haag and Müller 2019). In 2013, UNDP's Energy, Infrastructure, Transport and Technology unit launched a seminal policy paper (Waissbein et al. 2013), that outlines a complex methodology for risk assessment and risk mitigation, based on a bundle of instruments, including export credit insurances, investment promotion policies, political consultancy and securitization of credits. According to Gabor, this eventually results in the creation of a "de-risking state", whose local financial systems are re-organized according to the global de-risking agenda (see also Dafermos, Gabor, and Mitchell 2021 for a more recent assessment). Zambia's energy transition is a striking example of said strategies, all the more as the nation's fragile economic status has hardly attracted foreign investment in renewable energy in comparison, for example, to South Africa (Müller and Claar 2021). De-risking, so the argument goes, may provide a viable solution to resolve the nation's energy crisis and to recreate a streamlined green economy "from scratch".

These developments feed into a broader agenda, which has been labelled "financialization" by several scholars, initially coming from the spheres of heterodox economics and critical geography (Mader, Mertens, and van der Zwan 2020). In very broad terms, financialization refers to an understanding of finance as not only autonomous of – rather than subservient to – the productive economy but also as increasingly able to influence and even dominate the realms of society. This comprises "the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies" (Epstein 2005). Mader, Mertens, and van der Zwan (2020) point out that most scholars criticize these developments, namely with respect to the loss of democratic accountability, social precarity, rising inequality and macroeconomic instability. On a more abstract level, Van der Zwan (2014) deduces three major avenues of analysis that financialization pursues. Firstly, the emergence of a new regime of accumulation (Christophers 2018; Fine 2010, 2016), which focus on macro-transformations; secondly, the ascendancy of the shareholder value orientation (Lazonick 2010; Stockhammer 2012; Mazzucato 2013), which focuses on firms and ownership issues relating to financial markets; and lastly the financialization of daily lives (Martin 2002), which concentrates on the micro-level and explores how broader sections of society are incorporated into the rationales and flows of the financial sphere.

While several researchers have scrutinized variegated manifestations of financialization (Mertens 2016; Lapavistas and Powell 2013), they mostly referred to financialization processes in the Global North, a fact, which was initially bemoaned by Bonizzi (2013). Bonizzi, Kaltenbrunner, and Powell (2020) discuss the "subordinate financialization" of emerging economies, both in terms of being at the lower end of global production networks and for being disadvantaged by having to trade in currencies of advanced economies. More succinctly linked to contemporary development practices, Bracking (2016), for example, discusses financialization in the context of Africa's historical dependence on external capital flows, pointing out that financialized growth carries second-order effects such as draining business of investment capital. Gabor (2019) and Mawdsley (2016), in turn, explore the effects of financialization, and most explicitly the World Bank's (2020a) Maximizing Finance for Development Agenda for Development and Emerging Economies (DEE's), relating such effects to the bigger picture of "dependent financialization", that is, the creation of new dependencies between shallow DEEs, global banks, and asset managers.

Following the rise of the green economy paradigm, this increasingly plays out in the field of social and environmental change management, wherein the logics of bankability are the *sine qua non*. Altogether, the highly abstract level of such financialization processes means that their effects play out on the macro level and become manifest as interventions into state sovereignty, as institutional capture, or as a loss of political agency.

Still, following Emma Mawdsley's (2016) suggestion to concentrate on the "relationships between the micro and macro circuits of financialization", which garners a more comprehensive picture of the variegated effects of financialized transition agendas, there is a need to complement this macro perspective with on-going debates covering the effects of "everyday financialization". Randy Martin (2002, 43) argued that financialization is captured in ordinary people exposing their lives and homes to risky decisions hitherto left to capitalist professionals (Martin 2002, 8–12). Lapavistas (2009) coined the term "financial expropriation" to describe this reaping of profits from personal incomes, with individual creditworthiness imposing unprecedented financial discipline on daily lives and social reproduction. Heeding these concerns, several studies looked into the effects of micro-finance systems, micro-insurances, e-payment systems, or climate risk insurances (Wichterich 2012; Mader 2014; Rankin 2013; Dos Santos and Kvangraven 2017). As Aitken (2020, 369) has it, this focus on the consequences for the daily life "emphasizes the "making up" of financial subjects" and "the complex ways in which ever-widening populations are constituted as the risk-bearing, investing or indebted subjects that are amenable to finance and the constraints and opportunities it generates". Surveying low-income households, González (2020, 308) concludes, that financialization is far from only an economic phenomenon, but culturally transforms poor households in that "people internalize calculative frames, time horizons and rationalities".

As financialization effects can be identified in various spheres of development finance, we share Gabor's (2019, 2020), Baker's (2015), and Bracking's (2020) concern that the energy/ development nexus is exceptionally prone to such processes. Among the 17 SDGs, SDG 7 – fair and reliable access to renewable energy – heavily relies on blended finance. Provision 7.4 seeks to "promote investment in energy infrastructure and clean energy technology" (United Nations 2020) and thus actively encourages financial and capital market participation to meet RE infrastructure investment needs. Though both public and private donors channel blended finance for clean transitions, the high upfront costs for reaching SDG 7 are often used as justifications to introduce more private donors to the sphere of green finance. In this fashion, several development cooperation partners as well as international energy organizations have established RE transition agendas whose toolboxes promote de-risking programmes, auction instruments, green funds and the adoption of investor-to-state disputes. Altogether the initiatives by UNDP, the World Bank, Germany's development bank KfW as well as the International Renewable Energy Agency aim at rendering risky yet aspiring renewable energy markets "bankable" for transnational investors (Haag and Müller 2019; Müller 2017). At \$326 billion, private and blended finance accounted for the majority of climate finance (56 per cent) in 2017/2018 (Climate Policy Initiative 2019). Eighty-five per cent of this sum was spent on renewable energy (ibid. 2019). Captured by the "Wall Street Consensus", these tendencies also redefine the logics of development finance and play out in new programmes and initiatives aiming at nascent energy markets. Zambia's energy sector benefits from these ambitions, and especially European, Norwegian, and German donors as well as

the World Bank's International Development Association have been supporting grid integration, RE projects and not least policy change.

In the African context, the rise of market-liberal RE policies in several African states (Müller et al. 2020) is complemented by an emerging “transnational de-risking complex” (Haag and Müller 2019, 54); gives an account of current dynamics pushing towards financialization. Still, research on green financialization at the energy/development nexus has remained scarce beyond the recent examples cited above. We seek to contribute to this emerging field by concentrating on green financialization in Sub-Saharan political economies of (renewable) energy. With Zambia as our pertinent case, we demonstrate how green financialization transforms its political economy of renewable energy.

Renewable energy procurement schemes in Zambia²

Our empirical research is based on 38 semi-structured expert interviews, document analysis, and a participatory observation during a visit of a women cooperative with solar installations. Deploying a stakeholder assessment (Elster 1998; Bryson 2004), we map the roles and resources of actors, who have been involved in Zambia's transnational renewable energy projects. We, thus, disentangle the actors' consortia that orchestrate and take ownership of Zambia's energy transition.

Zambezi power: Zambia's political economy of energy

Zambia's current political economy of energy is a result of Zambia's political and economic development since independence in 1964. In the early years of independence, the Zambian government pursued import-substituting industrialization. Therein, the Zambian state converted several private companies into public property, with the copper mines in the Kitwe region serving as the economic backbone. Zambian economic development quickened tremendously for two decades, with the GDP growing more than in most other African countries (Ferguson 1999, 6). Due to the plummeting global copper prices, the economy took a major hit during the 1980s and 1990s (Gondwe and Pamu 2014, 4). High state expenditure resulted in heavy indebtedness (Whitworth 2015) and eventually led the IMF to impose structural adjustment programmes in exchange for loans. Over time, this resulted in a high dependence of the Zambian state on financial (aid, loans) and political support (Andreasson 2001). GDP growth rates have stayed volatile, ranging from 7.2 per cent in 2010, 2.9 per cent in 2015, 4.0 per cent in 2018, and around 2 per cent in 2019; they are expected to remain weak in 2020 and 2021 (AfDB 2020; World Bank Group 2020b). In the context of limited fiscal room for manoeuvre and indebtedness expected to reach 98 per cent of GDP by 2020 (World Bank Group 2019). Over the course of the Covid-19 pandemic, Zambia's debt crisis has aggravated to a point where the government asked first for a moratorium, and later for restructuring its Eurobond loans and Chinese loans (Ocampo 2021). Currently, Zambia's debt to international creditors stands at \$12 billion plus \$3 billion from Chinese lenders. Despite the IMF's support, the Zambian state will likely have declare bankruptcy in due course (Wiggelworth 2020). This fiscal crisis coincides with a nation-wide energy crisis. Given rising energy demands, load shedding has again become a frequent phenomenon. The neglect and lack of investment in the energy sector aggravates the situation, with the derelict

Kariba dam presenting a pertinent case in point (Whitworth 2014). Recurring droughts over the last few years adversely impacted hydropower performance, which makes up 95 per cent of installed capacity, resulting in even more load shedding. Fossil fuels make up the remaining 4 per cent of energy with a few coal and solar power stations currently under construction (Get.Invest 2020, 3; Kapika and Eberhard 2013, 129). ZESCO (Zambia Electricity Supply Corporation), the ageing and partly state-owned energy monopolist has been unable to meet the needs (Whitworth 2014, 261). This is in part due to low and by no means cost-reflective prices, the utility charges the copper mines, its chief consumer, since the 1990s. Moreover, increases in electricity tariffs have met fierce resistance. The private power company Copperbelt Energy Corporation attempted to increase tariffs in line with government recommendations in 2017, resulting in affected mines threatening the retrenchment of thousands of jobs. In the end, the government scrapped its recommendations to curtail job losses (Musonda 2021, 6). Offering among the lowest electricity tariffs in Africa (Whitworth 2014, 258–259), the state reaps low if any revenues from energy generation (Kapika and Eberhard 2013, 139), adversely affecting the government's ability to invest in energy infrastructure (Claar 2020). Yet also the implementation of a standard feed-in tariff (IEA 2018) could not attract investors, as the energy tariffs and the feed-in remuneration were too low to yield a return on investment,³ and the respective energy technology (right side). Between 2002 and 2018, a total of \$1327.61 million in development finance earmarked for energy sector development poured into Zambia (Figure 1).

In order to diversify the energy mix, the government agreed to install 600 MW of solar power through the World Bank's Scaling Solar programme in 2015. The programme foresaw the public-owned Industrial Development Corporation (IDC) Zambia partnering with private international investors and offered Partial Risk Guarantees in case ZESCO, the off-taker, were unable to pay for the energy produced (Interview, IDC official, March 19, 2019). At the time of writing (February 2021), the programme is on

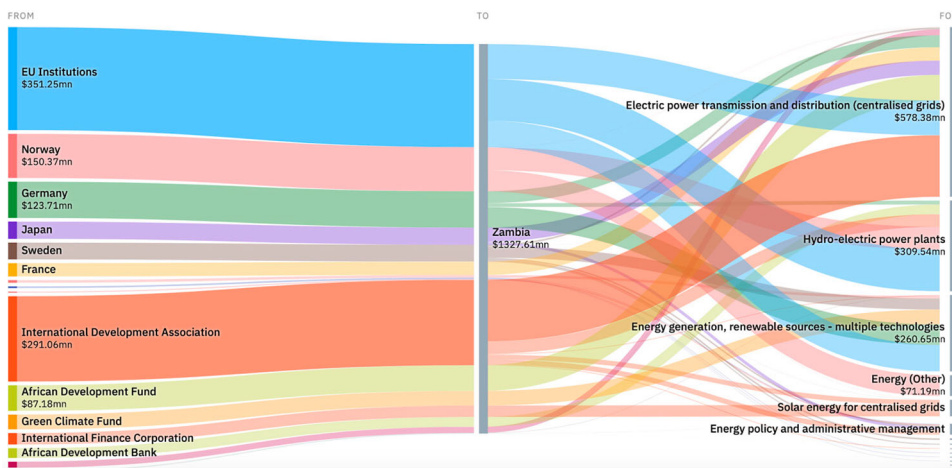


Figure 1. All recipients of development finance from donors (reporting data to the OECD) in Zambia for Energy (2002–2018). Source: https://aid-atlas.org/profile/all/zambia/energy/2002-2018?valueType=usd_commitment (19 August 2020).

hold, mainly due to the severe financial situation at ZESCO (Elsner et al. 2021). Two other renewable energy programmes with international involvement, however, have also taken root, namely GETFiT, implemented in partnership with the German Bank for Reconstruction and Development (KfW) and the BGFZ, supported by Swedish International Development Agency (SIDA). In the remainder of the article, we examine these two programmes in light of increasingly financialized development practices.

The Global Energy Transfer Feed-in Tariff (GETFiT) programme in Zambia

In 2011, Deutsche Bank provided the blueprint for GETFiT (Deutsche Bank Group 2011), a renewable energy procurement instrument first introduced in Uganda in 2013, based on Deutsche Bank's previous research on de-risking energy finance. Complemented by several de-risking instruments, such as risk assessment, risk insurances, and political consultancy, the programme's tender rounds seek to attract international investors. In Zambia, GETFiT was introduced in 2017 as "the official implementation program of the Zambian Renewable Energy Feed-in Tariff Strategy (REFiT)" (GETFiT Zambia 2019). Further rollouts of the programme are planned for Ghana, Mozambique, Namibia and Tanzania (Haag and Müller 2019). The Ministry of Energy introduced the REFiT strategy based on a blueprint of USAID (Interviews, Department of Energy II March 19, 2019; USAID Official I, November 18, 2015). The goals of the programme aim at diversifying the energy mix and strengthening private sector participation in the Zambian power market (GETFiT Zambia 2017, 2019). GETFiT is based on four pillars that taken together form a comprehensive de-risking strategy:

The first pillar "Viability Gap Funding" provides performance-based premium payment for each kWh produced. Given the relatively low energy tariffs in Zambia, this seeks to paint renewable energy projects attractive for Independent Power Producers (IPPs). With generation costs of solar energy falling globally, the proposed energy tariffs of solar project consortia have been competitive even without relying on the viability gap funding instrument (GETFiT Zambia 2019). The second pillar, the "Technical Assistance Facility", is curated by a British Law Firm and provides a standardized set of legal documents including Power Purchase Agreement templates, the Grid Connection Agreement (GCA) and the Implementation Agreement (IA) for the Zambian market (Africa Energy Portal 2019). In this vein, scalable solutions are created and directed at easing market entry for foreign investors. The auction process itself has been outsourced to the Norwegian tech consultancy Multiconsult, who also offer advice regarding the selection of project sites and the acquisition of land (Ibid. 2019). In the third pillar, the so-called "Risk Mitigation Facility", the African Trade Insurance (ATI) and the German *Kreditanstalt für Wiederaufbau* (KfW) offer a short-term liquidity product called "Regional Liquidity Support Facility", similar to guarantees provided by the World Bank under its Scaling Solar initiative (GETFiT Zambia 2017, 2019). These ensure companies if ZESCO, for example, failed to pay for electricity generated. Finally, consultancy and financial support are offered under the fourth pillar, the "Grid Integration Facility" in order to facilitate bureaucratic procedures. Therein, IPPs and Zambian stakeholders receive assistance, for example concerning the integration of renewables into the grid. Overall, GETFiT's main aim lies in designing and implementing de-risking measures, which provide a favourable

environment for international private sector participants by lowering uncertainty and financing costs for renewable energy investments.

As indicated in the third row of Figure 2, two bidding rounds have taken place with a third currently in the pipeline. The first round will provide 120 MW of solar power and the second 100 MW of mini-hydro. Each round consists of small- to medium scale projects up to 20 MW each (Ibid. 2019). In April 2019, the GETFiT secretariat announced the three consortia, which will implement the projects from a shortlisted 10 companies: Building Energy (Italy) and Pele (South Africa), Globeleq (UK/Norway) and Aurora Power Solutions (now Sola Africa, South Africa), and InnoVent (France) and Copperbelt Energy Corporation (Zambia). The consortia generate energy for \$c 3.999 to 4.8/kWh marking it as the first public tender in Sub-Saharan Africa that achieved tariff rates below \$c4/kWh (Green Building Africa 2019). With the selection process for the second-round projects still ongoing, the GETFiT office announced thirty pre-qualified developers for the tender with five of these companies being Zambian (GETFiT Zambia 2020a) in April 2019. In order to enhance chances for Zambian participation, meanwhile, a third round is currently under discussion, which will be reserved for Zambian companies only. However, that round merely targets mini projects of 0.5 MW. The Covid-19 pandemic has led to a delay in the implementation of round two, which was planned to continue in early 2020 (GETFiT Zambia 2020b). At the time of writing (February 2021), it is generally unclear when the GETFiT implementation will recommence.

Within the GETFiT process, some complaints were raised. First, Zambian companies and experts in the renewable energy sphere expressed the lack of inclusion of local companies (Interview, Renewable Energy Entrepreneur I, February 7, 2019). A particular hurdle is the financial requirements, which oblige bidding consortia among others to command over assets greater than \$25 million and to have an asset/liability ratio greater than 0.75, thus favouring big transnational corporations over smaller Zambian companies (Multiconsult 2018). Indeed, with the exception of CEC, all winning bidders are transnationally active and have a foreign origin. Even CEC has a diverse

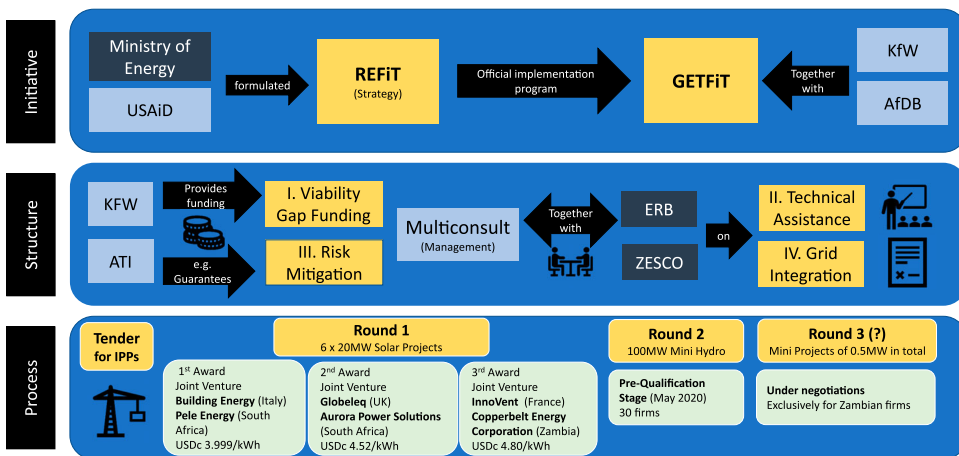


Figure 2. The Global Energy Transfer Feed-in Tariff (GETFiT). Source: Own compilation, with data from <https://www.getfit-zambia.org> (accessed 19 August 2020).

shareholding structure with transnational investors such as Marina IV (Singapore) Pte Ltd as its largest shareholder at 26.15 per cent (Copperbelt Energy Corporation 2018). Overall, the first round thus supported predominantly transnational finance to enter the Zambian energy market.

Off-grid electrification: the Beyond the Grid Fund for Zambia (BGFZ)

Even though off-grid electrification has not been the top priority of green funds in the past, the Beyond the Grid Fund for Zambia aggressively penetrates this space. Since urbanization is still limited and the Rural Electrification Agency's efforts to foster off-grid electrification have thus far not been very successful, Zambia offers ample opportunities. In 2016, the Swedish government and Power Africa stepped in and formed the Beyond the Grid Fund for Zambia (BGFZ) to support Zambia's rural electrification. SIDA, the Swedish development organization provided an initial \$10 million to the fund. \$20 million in additional funding are currently in the pipeline. The Scandinavian finance institution Nordic Environment Finance Corporation (NEFCO) manages the fund in collaboration with the Austria-based Renewable Energy and Energy Efficiency Partnership (REEEP) (BGFZ 2019). The fund aims to provide 1 million Zambians with access to clean energy by 2021. Following a tender in 2016, BGFZ contracted four companies in August 2017. [Figure 3](#) illustrates the structure and governance of the BGFZ, including the four companies that have been selected: Vitalite (Zambia), Fenix International (USA/France), Standard Microgrid (UK), and Emerging Cooking Solutions (Sweden).

All companies follow the BGFZ's "energy ladder" concept, which involves the opportunity to upgrade energy services (BGFZ 2019). The Zambian company Vitalite produces solar home systems (SHS) manufactured by the German company Fosera, while the Swedish company Emerging Cooking Solutions offers clean cooking appliances whose pellet systems provide an alternative to charcoal. Both use a PAYGO payment system. Customers can choose between different repayment schemes stretching over several months and own their SHS afterwards (BGFZ 2019).

Fenix International offers expandable SHS for off-grid households. In order to reach remote areas, the company uses mobile payments in collaboration with the mobile service company with MTN. After successfully repaying the loan for an initial SHS providing lighting, the customer owns the system and can decide whether to re-enter a repayment scheme for a system upgrade, e.g. electricity for a TV (BGFZ 2019).

Standard Microgrid (SM), in turn, installs smart Solar PV grids for communities of up to 150 customers. The company then sells prepaid energy services to customers instead of providing a classic grid connection, allowing a far more accurate and efficient demand side management (InfraCo Africa 2019; Interview, Standard Microgrid, March 28, 2019). A customer can, for example, choose to buy electricity to run a fridge for one day, rather than paying for each Watt individually.

All four companies rely on a continuous influx of payments for its energy services, befitting BGFZ's performance-based business models (BGFZ 2019). Companies receive more funding depending on their performance in terms of electrified households. BGFZ also offers grants to help companies expand their business (BGFZ 2019). According to an employee, the fund does not, however, target start-ups or smaller companies, but predominantly appeals to more mature companies (Interview, BGFZ, March 14,

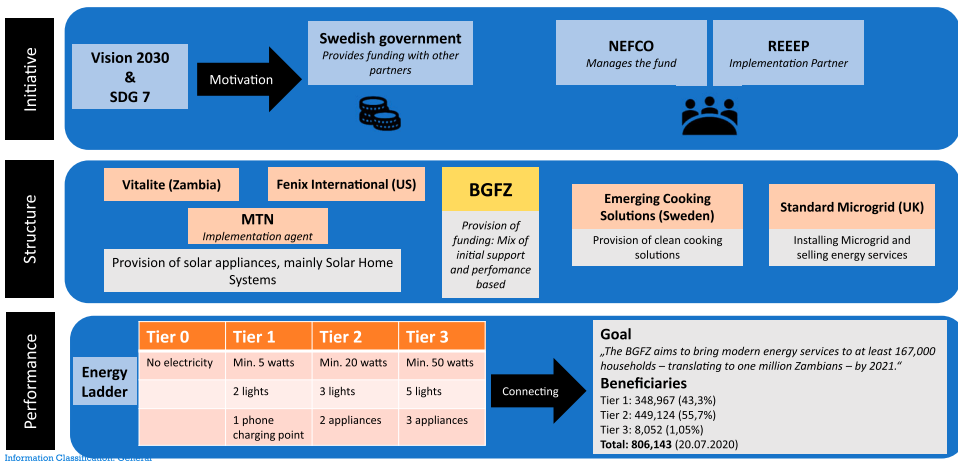


Figure 3. The Beyond the Grid Fund for Zambia (BGFZ). Source: Own compilation with data from BGFZ (2020).

2019). BGFZ, meanwhile, argues that its activities have enabled an off-grid market to evolve, despite being perceived notoriously risky and unstable, both due to the end customers, and to incomprehensive import and tax policies that pose significant entry barriers, particularly for smaller solar companies (Participatory Observation, Women Cooperative, November 17, 2018).

As laid out in several interviews, many Zambians can simply not afford the daily repayments (Interview, Fenix International, February 20, 2019; Interview, BGFZ, March 14, 2019, Participatory Observation, Women Cooperative, November 17, 2018), which results in selective off-grid electrification, side-lining the very poor the fund seeks to uplift. In the case of Standard Microgrid, customer’s only pay for energy services up-front, but do not enjoy the benefits of reaching ownership later on. At least technological know-how is transferred to the women; the company usually selects to represent them in each village (Interview, Standard Microgrid, March 28, 2019).

In terms of domestic stakeholder engagement, a government official described the involvement of Zambian political stakeholders in the activities of BGFZ as “almost non-existent” (Interview, REA official, March 29, 2019) which underscores a lack of political ownership also in the off-grid sector. Rural Electrification Authority (REA) pays testament to this. It used to be the main domestic government agency behind the Vision 2030 target of universal energy access (Government of Zambia 2006). Nowadays, REAs not involved in the activities of the BGFZ. This side-lining can, in part, be explained with the severe financial situation of the Zambian state, which resulted in the REA reporting an annual funding gap of \$35 million (REA 2017). BGFZ does provide support to an off-grid policymaking task force under the Ministry of Energy, in which the private sector can partake as well. This task force, however, mainly focuses on affordability issues among households in terms of rural electrification and receives support from the EU and the World Bank.

Regarding its objectives, the fund is well on track to meet its target of reaching approximately 1 million Zambians in 2021. According to “real-time” data, close to 930,000 Zambians currently benefit from BGFZ (BGFZ 2020). The fund is currently

expanding to Liberia and Burkina Faso, and the call for Mozambique is open as of early February 2021 (BGFZ 2021). Still, the electrification predominantly rests on a Tier 1 (i.e. lighting) and Tier 2 (smaller appliances) basis, with only a few customers reaching Tier 3 (clean cooking). Thus far, the stated goal to contribute to a reduction in deforestation – historically quite a significant problem in global comparison (Du Preez 2014) – through clean cooking, remains largely unfulfilled. And similar to the GETFiT critique, local solar companies as well as the Solar Industry Association of Zambia raised the issue of market distortion since, in practice; BGFZ provides funding only for large foreign companies (Oxfam International 2021).

The rise of parallel energy infrastructures and competing stakeholder coalitions

Zambia's energy sector is subject to dynamic developments. Our analysis of the GETFiT initiative and the BGFZ demonstrates how financialization restructures the country's political economy of energy. The cases yield four important insights into the financialization of development endeavours, thus expanding the debate with new empirical evidence. The first three will discuss the evidence on the macro level, and the fourth on the micro level.

Firstly, GETFiT and the BGFZ corroborate the assumption that Zambia's renewable energy transition is a *market-oriented, transnationally orchestrated endeavour* that lacks a sufficient level of domestic ownership. While financialization is not the only reason for a lack of domestic ownership in general, the way transnational renewable energy projects as a manifestation of financialization processes are designed leaves only a small, predetermined room for domestic actors. From the inception to the implementation of each programme, domestic actors are largely confined to advisory roles in steering committees, while their political capacities seem limited. This sidelining restricts their political sovereignty over transition processes. These interventions go deeper, as they directly tackle post-colonial statehood, prioritize investors' interests over domestic interests and permanently establish de-risking instruments on the institutional level. Compared to the Washington Consensus, we consider this a qualitative shift, due to the higher level of abstraction and the almost total neglect of developmental norms, that likely corresponds to a de-risking state in the making. Our analysis further suggests that international actors with little domestic ownership and thus little legitimacy, heavily dominate this process. In the case of GETFiT, this is demonstrated by the KfW's political influence over the process, and by the delegation of administrative and managerial tasks to Norwegian tech consultancy Multiconsult and to a British Law Firm, respectively. While the MoE also holds political ownership, its political influence on the more concrete governance and implementation tasks seems low, given that executive power has been shifted to the GETFiT secretariat. Furthermore, political consultancy prioritizes so-called "cornerstone policies" (Weissbein et al. 2013, 40) that promote market expansion, whereas policies that take RE as a crosscutting issue and feature social and educational aspects or technology transfer may be sidelined. In a similar fashion, the BGFZ also features a transition process with transnational actors in the driver's seat. At first sight, BGFZ's implementation practices combine bottom-up and top-down directions, as they formally involve the local community, the REA

and transnational donors. Yet, with fund management located in Sweden and Austria, local stakeholders, though cherished in the programme's descriptions, are mostly absent in the fund's governance procedures. The companies involved enjoy a high level of technical ownership, yet can be considered apolitical, as they do not exert influence on the fund structure or governance. Local consumers are not encouraged to get involved in the fund's governance through means of political participation either; so far, their ownership or influence in realizing BGFZ projects is rather minimal.

Secondly, both programmes *feature and facilitate market entry for FDI and blended finance*, thus continuing, prolonging and potentially exacerbating Zambia's dependence on foreign inflow of capital. Certainly, reduction in energy generation costs through foreign engagement is an indisputable developmental success, as is the roll-out of solar solutions at competitive prices. Still, similar to other renewable energy initiatives on the African continent (Haag and Müller 2019), the two initiatives resemble an intervention based on the careful combination of FDI promotion, capacity-building and de-risking tools. Especially GETFiT contributes to financial dependency with financial support and risk guarantees coming from donors such as KfW and the African Trade Insurance. Their financial influence can be considered a means of blocking power. The stakeholder assessment reveals that RE auctioning and de-risking is largely driven by and in the interest of transnational actors, and, in this case, widens the influence of western actors. As such, this lack of domestic ownership also *limits the benefits for Zambian companies and African entrepreneurship* as a whole. By ushering in foreign competition unrestrainedly, these programmes likely exacerbate rather than address local industry concerns. Apart from the small Zambians-only round that is currently discussed under GETFiT, the de-risking efforts prioritize market-entry for big transnationals over local content criteria, which would diversify the domestic economy and create (decent) jobs. The data paint a similar picture for the BGFZ, where Vitalite is the sole Zambian company amongst its international competitors. Effectively, the maintenance of the renewable energy solutions does create a few jobs and delivers a partial technology transfer at best, given that knowledge transfer is clearly not a vital goal of BGFZ's agenda. To sum up, the case of transnational renewable energy investments in Zambia underlines the qualitative shift that has happened also with regard to attracting FDIs. Combined with the severe financial situation of the Zambian state, the current way in which foreign investments enter the country neglect other developmental concerns stated in the SDGs such as industrialization (SDG 9) and the creation of decent work (SDG 8). Careful policy design for renewable energy investments could expand the scope of developmental goals as stated in the SDGs (see Müller and Claar [2021] for an assessment of the South African renewables procurement programme).

Thirdly, the BGFZ offers insights into the *effects of a financialized green economy on the daily life* of energy customers. The repayment schemes attached to the various energy services operate similarly to the microcredit systems (Mader, Mertens, and van der Zwan 2020) thus mirroring Martin's (2002) critique of imposing financial logics on the day-to-day life. The BGFZ helps electrifying rural customers, or even turns them into empowered "prosumers" who eventually own their SHS. However, the payment models turn citizens into borrowers and are driven by disciplinary assumptions with a low tolerance for credit rationing or income volatility, which may result in sudden lockouts and weakening customer credibility, as is the case in Fenix International's business model (Fenix

International 2020). Short warranty periods of only three years and a reliance on remote maintenance may add to credit dependency. In this regard, the risk associated with the creation of a private business case in the field of rural energy provision is shifted onto the customers and the public authorities. Rowden (2019, 29) argues that the actual quality of the services provided by public–private partnerships (PPPs) suffers while the risk is shifted anyway. Moreover, the provision of infrastructural services through PPPs is often “the most expensive way to finance projects” (ibid., 29; see also Bayliss and Van Waeyenberge 2017). Overall, the financialization of daily life is thus inscribed in Zambia’s emerging off-grid energy market. Generally, it prevents a self-sustained rural development (Bartels 2019) and, particularly, leaves lasting imprints on the household lending habits. The BGFZ’s practice reflects González’ (2020) concerns of micro-credit lending culturally transforming rural households and potentially producing new forms of exploitation, exclusion and social control. These concerns are particularly justified given the perceived reluctance of Zambian households to finance consumption through borrowing. MTN’s detailed client data, further, enables Fenix International’s precise product merchandizing. Irrespective of the options, rural Zambians are turned into customers, disciplined in their spending choices and made attractive for transnational companies operating at the energy/development nexus. Although being a customer may not in itself be problematic, issues of affordability among the poorest call for additional public solutions for energy provision. In this regard, civil society organizations in Zambia point out that PAYG systems as being used in the BGFZ can help in enhancing energy access at first, but should only be a “temporary solution” since they do not address unaffordability at greater scale (Interview, Civil Society Organisation, February 11, 2019).

Overall, we conclude that despite the inroads in renewable energy expansion in Zambia, a few drawbacks emerge. Both renewable energy programmes under scrutiny liaise the connection between transnational corporate interests and domestic bankable projects, thereby entrenching the role of interest-bearing capital under a green umbrella. Whether through de-risking or (mobile) lending schemes, this practice adds another chapter to Zambia’s structural (financial) dependence on foreign actors and a constant flow of green capital. Simultaneously, the energy transition is increasingly governed by international rather than domestic actors. As a consequence, domestic industry concerns have largely fallen by the wayside. In discussing these trends in the Zambian context, this article contributes to the emerging debate on green financialization in the Global South, whilst adding a “green” brush stroke to the financialization of daily life strand. Furthermore, the analysis of two programmes in the renewable energy sphere supports Gabor’s (2019) claim that the introduction of Global Finance to developing countries is a main pillar in the achievement of the SDGs. Zambia’s transition is, therefore, a fascinating space of diverse manoeuvres, where financialization trends intersect with energy-development concerns. The rollouts of GETFiT and BGFZ in other African countries, in particular, and the de-risking and borrowing tools that mushroom at the cross-roads of energy and development in many African countries, more generally, provide apt scope for further research. Our article added weight to concerns of superimposing financialized structures on development collaboration by pointing out some detrimental effects. Especially contrasted to domestic transition concerns, we see the need for more studies exploring the controversial potential of transnational actors orchestrating transition endeavours in the Global South.

Notes

1. De-risking programmes target RE sectors in Benin, Burundi, Ethiopia, Ghana, Malawi, Mozambique, Namibia, Uganda, and Zambia.
2. For a comparison of the two transnational programs that seek to restructure Zambia's energy infrastructure, see Elsner et al. (2021).
3. Chinese donors, notably, do not report their investments to the OECD and, therefore, do not appear in this chart.

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Notes on contributors

Carsten Elsner is a Research Associate in the research group “Glocalpower” based at the Political Science Department at the University of Kassel. He holds a Master's degree in Political Economy of Development from the School of Oriental and African Studies (SOAS), University of London. Previously he completed a Bachelor of Arts in Political Science and a Bachelor of Science in Economics at the Ludwig-Maximilians-Universität in Munich (LMU). His current research revolves around the political economy of energy transitions in Africa and standardization processes of green finance with a focus on the EU taxonomy.

Manuel Neumann is a Research Fellow of the research group “Glocalpower” anchored in the Department of Political Science. He holds a Master's degree in Globalisation and Development from SOAS (University of London). Previously, he read Political Science at Delhi University and completed a Bachelor's degree in International Economics from Tübingen University. His research revolves around the political economy of energy transitions in developing and emerging economies more generally and green financial tools such as green bonds in particular.

Franziska Müller is Assistant Professor for Globalization and Climate Governance and leads the research group “GLOCALPOWER: Funds, tools, and networks for an African energy transition” at the University of Hamburg. Her main research interests are global climate and energy governance as well as theories of international relations. Her current research focuses on international politics in the Anthropocene, green financialization, and transformations of postcolonial statehood.

Simone Claar leads the research group “Glocalpower: Funds, tools, and networks for an African energy transition” at the University of Kassel. Her research interests include international political economy focusing on trade policy, capitalism in Africa, and renewable energies. The regional focus lies on emerging markets and Sub-Saharan Africa. Currently, she investigates the involvement of trade unions in renewable energy transitions and the emergence of a “Green Capitalism in Africa”.

ORCID

Simone Claar  <http://orcid.org/0000-0001-5999-3711>

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Appendix. List of interviews

February/March 2019

Interview with USAID official II, February 5, 2019.
Interview with Renewable Energy Entrepreneur I, February 7, 2019.
Interview with Social Organisation II, February 11, 2019.
Interview with Renewable Energy Entrepreneur II, February 14, 2019.
Interview with Research Institute I, February 14, 2019.
Interview with World Bank Official, February 14, 2019.
Interview with Africa GreenCo, February 19, 2019.
Interview with Fenix International Official, February 20, 2019.
Interview with UNZA Researcher III, February 21, 2019.
Interview with OPPPI official, March 1, 2019.
Interview with Stockbrokers Zambia Limited, March 5, 2019.
Interview with BGFZ official, March 14, 2019.
Interview with IDC official, March 19, 2019.
Interview with China Energy Engineering Group, March 19, 2019.
Interview with Department of Energy II, March 19, 2019.
Interview with Research Institute II, March 20, 2019.
Interview with ERB Official II, March 20, 2019.
Interview with UNZA Researcher IV, March 27, 2019.
Interview with Standard Microgrid, March 28, 2019.
Interview with REA Official, March 29, 2019.

November 2018

Interview with KfW official, November 14, 2018.
Interview with UNZA Researcher I, November 15, 2018.
Interview with UNDP official, November 16, 2018.
Interview with UNZA Researcher II, November 16, 2018.
Interview with Social Entrepreneur I, November 16, 2018.
Participatory Observation Solar Hammer Mill, November 17, 2018.
Interview with Political Foundation, November 19, 2018.
Interview with Development Organization, November 20, 2018.
Interview with Development Organization II, November 22, 2018.
Participatory Observation Launch Solar Energy Centre, November 22, 2018.

November 2015

Interview with Development Bank, November 6, 2015.
Interview with Social Organisation I, November 9, 2015.
Interview with Corporation, November 10, 2015.
Participatory Observation ERB Public Hearing, November 10, 2015.
Interview with ERB official I, November 11, 2015.
Interview with Department of Energy I, November 16, 2015.
Interview with EU Delegation, November 16, 2015.
Interview with USAID Official I, November 18, 2015.