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THE GLOBAL POLITICAL ECONOMY OF GREEN FINANCE AND SOCIO-ECOLOGICAL TRANSFORMATION

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Green Finance and Transnational Capitalist Classes – Tracing Vested Capital Interests in Renewable Energy Investments in South Africa[1]

Abstract *The green economy's general global agenda is to attract investments into renewable energy. Within this setting, transnational capitalist classes are one primary driver as well as being key investors. The article investigates how transnational classes shape green investments, particularly in renewable energy in Africa. This is demonstrated by tracing the ownership structures and links to transnational capital classes and private equity through one case within the South African Renewable energy procurement programme (REI4P). The article, thus, addresses the lack of consideration of ecology and class issues in critical International Political Economy, arguing that colonial relationships are perpetuated within the green economy and finance.*

Keywords *International Political Economy, green economy, green finance, renewable energy, South Africa*

1. Introduction

Worldwide, investments in renewable energy (RE) have reached new heights in recent years. In 2019, global RE investment was $301.7 billion. $15.2 billion was invested in renewable energy capacity in the Middle East and Africa in 2019 (Frankfurt School-UNEP Centre/BNEF 2020: 11, 46ff., 58ff.). And, even though we can expect a slow down due to the Covid-19 pandemic, renewables seem less affected than other conventional energy source (IEA 2020).

This overall trend is noteworthy, especially for emerging economies in Sub-Sahara Africa, which have been presented with an opportunity to benefit from greening their economies through renewable energy projects. Environmental concerns and sustainability have become a feature of major economic development, offering promising growth rates through greening portfolios by means of innovative financial products. The main ideological perspective on which the green economy rests is that environmental services and green financial instruments can solve environmental degradation. Alongside, we could observe the shift from production to finance capital, and finance capital has become one of the main shapers of the global economic system, with palpable effects on the environment (Foster 2007: 1; Katz-Rosene/Paterson 2018: 48ff.).

Within the International Political Economy (IPE) debate, the attention is mainly on the environment and classic resources such as oil. There has recently been a shift towards research into renewable energy (e.g., Sovacool 2018; Newell 2018). I expand on this engagement of IPE and renewable energy investments by focusing on the role of Transnational Capitalist Classes (TCC) within these developments, paying particular attention to the various political and economic conditions underpinning green finance. Up to now, debates on class and ecology within IPE have been few and far between. Given the rise in transnational investment, it is necessary to connect these perspectives by asking the question: How do transnational capitalist classes shape green investments?

I argue that the emerging alliance between transnational actors and their investments in RE projects reflect the influence of different fractions and interests of capital in the RE investment context. The complex nature of this argument is approached by using a combination of different theoretical debates surrounding IPE, the green economy, and transnational capitalist classes in the field of renewable energy. In the next step, South Africa's transnational competitive bidding scheme REI4P, its potentials and pitfalls in attracting many transnational conglomerates to its solar and wind sectors is reviewed. In terms of methodology, the single case of Biotherm Energy Ltd. is selected out of a cross-sectoral analysis of 82 RE projects (2011 to 2016).[2] This player is briefly outlined and then analysed to demonstrate the deep entanglement of transnational classes within the renewable energy realm.

2. Ecological interventions in International Political Economy

Historically, the IPE literature mainly focused on pillars such as trade, finance, and production. The IPE perspective presents central analytical categories such as the relationships and interactions between international and national political economies, between public and private, and between the state and social forces (e.g.; van de Graaf et al. 2016). More recently, though, IPE has forayed into new areas, including political ecology, sustainability, energy, and environment, and discussed their intertwined connection with classical theoretical approaches of IPE (e.g., Kuzemko et al. 2018). For instance, this critical engagement had a bearing on global politics in the critical discourses surrounding the Rio Summit, where the neoliberal green economy framework was presented, and within environmental concerns raised around contemporary trade policy and trade agreements (Clapp 2014: 108). As becomes clear in this context, the connection between economics and the environment had turned into an analytical category within the ambit of IPE. However, given the dominant influence of the world market price for oil, its rents, and the potential resource course (van de Graaf et al. 2016: 21ff.), renewable energy and the role of electricity remain a small research subfield (Hancock/Vivoda 2014).

In more recent debates, Katz-Rosene and Paterson (2018: 4) address the concern of "how thinking ecologically transforms our understanding of what IPE is and should be" (Katz-Rosene/Paterson 2018: 4). They call for an understanding of IPE themes as "ecological phenomena" (Katz-Rosene/Paterson 2018: 34) with direct and indirect linkages to, for instance, trade, production, and finance. Katz-Rosene and Paterson (2018) label this heuristic framework "Global Ecological Political Economy". The strength of this framework is to think ecological issues along with all spheres of life, thus upending prevailing notions of the environment merely being an add-on to trade, investment, and finance (Clapp 2014: 110ff.). By zooming in on the interconnection of the state-business relations, this stream also widens an already existing focus on formal international cooperation on environmental issues. Clapp and Helleiner (2012: 490ff.) rightly call for this debate to be connected to the financial market, structures and power relations in order to understand the link between finance and the environment. Parallel to the development within IPE, the transdisciplinary field

of (global) political ecology gained prominence during the 1990s. Similar to critical IPE, the historical conjunctures, relation to production, the relationship of forces etc. are analysed along different policy fields (see more in Peet et al. 2011), whilst consistently establishing links between political economy and the environment.

These two strands demonstrate IPE's increasing engagement with research fields such as the environment, climate change, and energy. They, thus, provide better insights and developments within the field of IPE and highlight the increasing relevance of (renewable) energy in social science (Sovacool 2014; van de Graaf et al. 2016; Kuzemko et al. 2018). As well as the broad macro-economic perspectives, it is necessary to build concrete analytical tools within critical IPE to shed light on the process of energy transition. However, the importance of finance, in energy transition only briefly touches the concrete relationship to class relations. Newell (2018: 10ff.) offers one of the few exceptions, connecting energy transition with neo-Gramscian IPE, and shedding light on the role of the state and hegemony. This article contributes to filling the absence of research on the role of transnational capitalist classes within green finance and renewable energy investments. Analysing the driving factors of green economy and green finance from a critical perspective is key to this endeavour.

3. Filling the gap: Transnational Capitalist Classes in the green economy and in green finance

Before delving into the role of Transnational Capitalist Classes (TCCs) in the renewable energy investment landscape, it is important to shed light on the globally propagated principles that underpin, facilitate and justify the engagement of TCCs in green, and particularly renewable, energy investment. I will first introduce the 'green economy' concept before tracing key components of contemporary green finance. The discussion of their entanglement with TCCs will wrap up this section.

3.1 Green economy

The 'green economy' is the umbrella concept underpinning transnational market-friendly policies in the energy sector and beyond. It gained

popularity in the international organisations around the time of the financial crisis in 2007. For the United Nations Environment Programme (UNEP), green economy is not only "a new engine of growth" (2011: 3) but also "low carbon, resource efficient and socially inclusive" (2011: 2). This UN model focuses on embedding ecological aspects into trade and investment policies and creates policy innovations and incentives for the private sector. However, it does not give a description of interventions into the market or forms of regulatory governance. As such, the nexus between theoretical understanding and practical concepts are highly interwoven in these debates. A crucial critique points to green economy strategies and the resulting framework for ecological change being mainly Northern-driven, despite the South having to bear the environmental brunt of the lifestyles and forms of imperialist way of life in the North (Brockington/Ponte 2015: 2199; Katz-Rosene/Paterson 2018: 63-64; Brand/Wissen 2018). Many authors conclude that, in light of this, the green economy as a strategy will not lead to any change in capitalism's nature, as it reproduces capitalism's need to continuously expand its markets (Harris 2013: 468; Brand 2015; Katz-Rosene/Paterson 2018: 50). Even in the Covid-19 induced financial and economic crisis, the green economy and green finance are regarded as the main pillars to a post-Covid recovery and 'building back better' (see e.g. OECD 2020).

Thus, the green economy provides the green platform for the internationalisation of states, especially when it comes to emerging economies; there is thus a need to unpack new economic dependencies and capital formations (e.g., Harris 2013; Brand/Wissen 2018). In unpacking these connections, it becomes notable that the green economy continues the free-market approach (Ehresman/Okereke 2015: 16) and does not provide any alternative to the current economic order. Quite the opposite – the green economy seems to provide capital fractions, particularly capital and financial actors, with renewed legitimacy (Monk/Perkins 2020) and opportunities for capital accumulation in times of ecological crisis.

3.2. Green finance

According to Clapp and Dauvergene (2005: 189ff.), there is a strong link between global finance and the environment. This includes various ways of providing access to different types of financing, such as public and

private loans, technical assistance, and multilateral and bilateral grants. The financial flows are always on the move as there is always the demand for liquidity (Gabor 2019), which is satisfied through financial tools such as green bonds. Gabor (2019) suggests that these standardised channels of financial flow play an important role in investment in ecological and sustainable development. Within this context, "finance can be seen to have an important role in shaping patterns of environmental degradation, particularly through its structural power and in this way, it shapes the incentives of actors across the spectrum – states, other businesses, or social movements – to act in particular ways." (Katz-Rosene/Paterson 2018: 48) Over decades, a shift from production to finance capital has taken place (Foster 2007: 1), and finance has become one of the main drivers and configurations of the global economic system, also having an "indirect effect on ecological questions" (Katz-Rosene/Paterson 2018: 48).

The problem with this practice is that the basic principles of growth and maximising profit remain non-negotiable, even if the ecological crisis remains unaddressed (Sandberg 2015:6). Svartzman et al. (2019: 110f.) go as far as to argue that the financial markets cannot adequately react to climate change, as they are incapable either of reflecting on the damage of eco-systems or creating ecological achievements. Financial capital, historically, has strong ties with fossil fuel-based accumulation regimes (Newell 2018: 12ff.).

The concept of financialisation adds layers to these problems. Critical political economists such as Fine (2010: 99) describe financialisation as a process in which "economic activity, in general, has become subject to the logic and imperatives of interest-bearing capital." Though the term financialisation has found frequent usage and enjoys different definitions and divergent approaches (Mader et al. 2020: 6ff.), this paper focuses particularly on the mechanisms of financialisation, which happen to be the same mechanisms used in the field of green economy, as shown below. In addition to a Northern driven ecological change, the Southern economies have a subordinated role in financialisation that leaves them limited financial opportunities (e.g., Bonizzi 2020).

Under the umbrella of the green economy, new (financial) markets and areas (such as locations and sectors) of investments are created and "can lead to […] vast profits for those corporations producing and deploying

the green technologies" (Harris 2013: 469). Another selling point is the oft-believed positive effect of the green economy, by reducing the environmental risks and the impact on the nature (UNEP 2011, see also Harris 2013: 469). Through financial innovation, the financialisation and commodification of nature have progressed significantly. This is evident in carbon emission schemes such as the Redd+ (Müller 2017), but increasingly also in financial innovations that bank on the environmental risks, such as catastrophe bonds (Bracking 2019). These concepts illustrate how ecological issues are often 'an afterthought' in discourses, and strictly separated from the financial value (Bracking 2015).

Within capitalism, nature is used as a commodity, i.e., as a sink of exploitable resources. As the above examples illustrate, within the financialisation of nature, nature itself is re-invented as a commodity, from which profit has to be generated for finance capitalism.

3.3 Financing renewable energy

The debates around financing renewable energy focus on development finance institutions such as the World Bank and the African Development Bank, which not only lend money directly, but also make various funds available and provide guarantees and other de-risking tools as catalysts for the private sector (see, e.g., Gabor 2019; Elsner et al. 2020). Depending on the fund's structure, state actors, companies, or a combination of both, have access to financing for their renewable energy projects. Other parallel framework conditions are also being discussed in order to make investments attractive to the private sector. These include various financial and policy de-risking mechanisms that are provided not only by development finance institutions, but also by nation-states. For instance, de-risking are loan guarantees, Partial Private Risk Guarantees, public equity for co-investments, and national policies to ensure the legal ground, for instance, renewable energy investment has a national legal ground for feed-in-tariffs (Wassbein et al. 2013; Schwerhoff/Sy 2017: 397). In this way, the financial de-risking instruments for private investors are financed through public resources (Mazzucato/Semieniuk 2018: 16). Schwerhoff and Sy (2017: 399) argue that renewable energy projects will gain from hard loans or equity finance, as the project itself is more financially viable for investments. In practice, financing of infrastructure projects includes these transnational

financial links with multilateral financial institutions and developmental and private banks. Overall, these developments in the financial system limit the room for alternative pathways for the Global South, as Gabor (2019: 26) highlights: "Public resources have to be dedicated to de-risking "developmental" assets, to identifying "bankable" developmental projects that can easily be transformed into tradable assets […]." (Gabor 2019: 26). These practices have also spilled over into the capital markets, where green bonds are another form of debt provision for renewable energy projects (Schwerhoff/Sy 2017: 397ff.)

Crucially, all these practices of financing renewable energies keep the imperialist way of living intact (Brand/Wissen 2018), in that these financial practices perpetuate the dependencies between North and South. In view of this, a critical political-economic perspective can gain insights from postcolonial debates on the economy (Kayatekin 2009: 1115). So far, the engagement of critical IPE and postcolonial thinking are limited; however, three additional points are important in relation to green economy and finance. Firstly, just one type of capitalism does not exist (Gruffydd Jones 2013: 59). Secondly, there is a need to connect the global finance structure with colonialism and slavery; this is especially so since the growth and current dominance of the credit system, joint-stock companies and insurances in the colonising states were built on slave exploitation and trade in the 18th century (Gruffydd Jones 2013: 55). Lastly, this knowledge offers the opportunity to understand in more depth financial needs from the perspective of the South.

3.4 Transnational capitalist classes and the green economy

TCC fractions involved in the green economy and finance are linked to various forms of capital. National and foreign capital as well as finance and banking capital are essential drivers of green investments, including, and in particular, for renewable energy investments. The state and its apparatus do not just provide the political framework. Instead, the state is a "specific material condensation of the relationship of forces among class and class fractions." (Poulantzas 2000 [1978]): 132) that is also reflected at the international level (Jessop 2017: 195f.; Brand/Wissen 2018: 54, Claar 2018). There, TCCs receive support from the international state apparatus, institutions such as the United Nations and the World Bank. For instance,

in 2007, the European Investment Bank issued the first climate-linked Bond (EIB n/a), followed by the Green Bond of the World Bank a year later (World Bank 2019; Monk/Perkins 2020). These actors' function as catalysts for private investment, and as supporters of the regulatory liberalisation of capital flow. Brand et al. (2011) describe this as a "second-order condensation of the relationship of forces". In this article, I draw on a theoretical framework that investigates the relationship of forces in the semi-peripheral state in order to get an in-depth understanding of transnational financial capitalist class fraction and its interests in renewable energy investments (Poulantzas 1976; Claar 2018: 15ff.).

The growing role of transnational capital in renewable energy investments (see among others Sovacool 2012; Clapp/Helleiner 2012; Hancock/Vivoda 2014), and in large corporations which are operating in Europe and the US and which profit from renewable energy investments (Harris 2013), needs to be analysed through a critical IPE lens which also considers historical dependencies. We need to understand the driving forces within these 'greening' debates and which 'voices' and interests are dominant. Considering class relations on the national and transnational levels fosters an analytical focus which highlights specific investment interests and patterns. Up to now, social-class analysis in the context of the global South is limited in the context of green investments and renewable energy, because the existing research have rarely focused on real social forces. However, drawing on Svartzman et al. (2019: 112f.), it is necessary to understand that green investment might be just one pillar in the change with a ecological transformation. Within these green settings the financial instruments remain the same as in other investment fields.

A good starting point for analysing transnational capitalist classes is locating and understanding the kind of actors involved and how they are embedded in the transnational and national relationship of forces. Drawing on work explicitly focused on financial actors in RE investments, it becomes clear that the structure and motivations of the actors influence their form of investments (Mazzucato/Semieniuk 2018: 9f.). It also highlights the role of different capital fractions and interests within the field of RE investments. In order to broaden the scope of IPE, these concepts must not only point out current North-South relations, but must also acknowl-

edge their historical conjunctions and various types of economies. In so doing, we capture a few missing links: we relate critical IPE to financialisation on the micro-level, which is oftentimes neglected (Mader et al. 2020), and further the debate surrounding green political economy with an empirical example deeply entrenched in these North-South-relations.

4. Renewable energy investments in South Africa

South Africa's competitive bidding scheme has become a blueprint for accelerating a low carbon transition by market means and can be situated at the heart of green economy endeavours. After briefly touching upon the political economy of energy in South Africa, this bidding scheme will be outlined in more detail. Following that the structure of one successful company, BioTherm Energy, will be unpacked to try to understand some of the driving factors of the green economy and finance, and the role of TCCs.

The South African energy market has been under strain for decades. Dependent on a crisis-ridden state-owned energy provider, Eskom, which supplies 95 per cent of the state's electricity (Deloitte 2017:25), and which is bound by continuing contracts with the coal mining industry, Eskom is part of the specific accumulation regime known as the minerals-energy-complex (Fine/Rustomjee 1996) or minerals-energy-finance-complex (Ashman/Fine 2013). The complex has a strong impact on other economic sectors, such as services and manufacturing. Also, the MEC perpetuates the dependence on foreign financial capital, which, through increased capital mobility, has led to the economy being massively affected by capital flight over the last decades (Claar 2018: 42, 88; Nölke et al. 2020: 159ff.).

To address the energy shortages and grapple with the global climate crisis, the South African government introduced a flexible, competitive bidding scheme called the Renewable Energy Independent Power Producer Procurement Program (REI4P) in 2011. Four bidding rounds have taken place so far. The selection criteria are based not only on price (70 per cent) but also on economic development factors (30 per cent), which include job creation, ownership, and socio-economic indicators

(e.g., Eberhard et al. 2014:12f.; Baker et al. 2014; Baker 2015). The overall investment in REI4P was R201.8 billion, of which R48.8 billion (24 per cent) was foreign investment (DoE 2018: 28). Thus, while REI4P seems to be a highly efficient and transparent liberal transition tool, it has generated a dynamic of its own. Among other things it has promoted various national interests and distinct investment patterns in South Africa's green transformation process.

A cross-sectorial analysis illustrates that transnational shareholding and capital play a crucial role in all four bidding rounds. In total, 69.5 percent of the projects have transnational ties, and a large amount (37.8 percent) of the renewable energy projects are embedded in transnational capital (see Müller/Claar 2020). Notably, most of these head companies are concentrated in Europe or the United States. One can, therefore, preliminarily conclude that TCCs play a significant role in the REI4P process. However, the issues go further; even though domestic investment companies such as the black-owned Thebe Investment Corporation are part of the shareholder consortiums and specialise in 'green investment', they merely ensure that TCCs implement the mandatory Black Economic Empowerment criteria (Eberhard et al. 2014, Baker 2015: 150ff.). More strikingly, Franziska Müller and myself (2020) found that, within the REI4P bidding scheme, transnational investors usually hold a blocking minority and are in charge of the entire sequence of the project cycle, from bidding over financing to the operating processes. Generally, the projects financing is based on private equity and debt provided by equity firms and banks. Given their extensive equity holdings, transnational companies can bear the risk of project development more readily and have cheaper access to finance (Baker 2015: 150ff.), thus giving them a structural advantage.

Within the 82 projects, there are companies and financing constellations that appeared regularly in several bidding rounds. One such company is BioTherm Energy Ltd. Over the four rounds, the transnational company successfully bid for nine projects, four in wind, four in solar, and one in biogas, respectively.

Firstly, it was selected as an example, based on it having projects in different bidding rounds and financing through private equity. One financier is the global equity firm Denham Capital. Its parent company is a Dutch renewable energy company owned by Denham Commodity Partners Fund V. LP. Before the renewable energy process in South

Africa, Denham Capital provided US$ 150 million to the development of BioTherm Energy in South Africa (Gauteng Business News 2008; Baker 2015: 150). These early ties demonstrate that transnational finance capital classes are expected to reap a profit from the South African RE market. It also explains how significant portions of BioTherm Energy projects in South Africa are financed mainly through Denham capital equity.

Secondly, the RE projects receive credit from Standard Bank or Nedbank and the Industrial Development Corporation. The Konkoonsies II project further shows the interlinkage between Nedbank's involvement and the fact that the renewable energy fund, called the South African Vantage Green X Fund, provided financial resources for the project (BioTherm Energy 2018; Vantage Capital n/a; Takouleu 2018).

Finally, the financial ownership structure of BioTherm Energy has become increasingly more complicated. In 2019, Denham Capital sold it to Actis, which had already been active in another eight South African RE projects via Globeleq Africa (Actis 2019, n/a). In light of this, it is clear that only a few companies are involved in several projects, such as the firms like BioTherm Energy and Globeleq under the umbrella of Actis, Enel, and some others. This demonstrates that RE investment is highly embedded in global finance capital. TCCs have more possibilities for capital-intensive RE infrastructure projects in South Africa than national investors.

Looking at the BioTherm Energy case, a few things can be generalised: firstly, that equity firms might not expect a long-term return, and that a much more dangerous pathway looms on the horizon on the African continent, where the RE sector will be concentrated in the hands of a few. Secondly, in the long run, the monopoly will have broader implications for the investment schemes and the communities that barely benefit, as it was also evident in the Zambian case (Elsner et al. 2020). These investment flows show that there would be a financial demand for national capital to compete with the transnational capitalist classes. Beyond the energy sector being reshaped, the REI4P revealed that the expertise, technology, and capital power to participate in the tender emanate from the global North. Dependent relationships in terms of capital and technical innovation are, thus, perpetuated. In sum, the analysis demonstrates that large RE investments are taken by global financial capital. The transnational pattern complicates the understanding and transparency of the RE projects' ownership structures, and not only in South Africa.

5. Conclusion

This article traced the key role of transnational capitalist classes in promoting and benefiting from renewable energy investments. By deploying an ecologically-conscious critical IPE approach, I scrutinised prevailing green economy and green finance concepts and traced how these practices enable new markets – and thus opportunities to reap profits – to form. By examining the ownership structure of the company Biotherm Energy, I demonstrated the relevance of transnational class fractions in reaping profits from new green economy schemes. These structures show the active involvement of transnational financial capital, although it is not easy to follow the financial flows, as the access to data is limited. However, due to these emerging financial structures, hardly any local ownership takes place in the renewable energy transition process in South Africa. These structures also relate to colonial, political, and financial dependencies and indicates that it is necessary to rethink critical IPE, ecology, and class from a post-colonial perspective. A class perspective on ecological issues helps capture and light the conflicts between and among various fractions on a national and transnational level (Jessop 2017: 195f.). More critical inspection of the green economy and green finance, particularly from a critical IPE vantage point, is needed to deepen the understanding of TCCs in contemporary low-carbon transition endeavours. More in-depth investigations may be able to advance the question as to whether this inspection can, indeed, identify new fraction of the green transnational capitalist class.

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2 The data analysis was backed by expert interviews with policymakers, social entrepreneurs, social partners and research institutions in South Africa in 2018.

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Abstract *Die globale Agenda der 'Green Economy' unterstützt Investitionen in dem Bereich der erneuerbaren Energien. Eine zentrale treibende Kraft sowie Investoren sind transnationale kapitalistische Klassen. Der Beitrag untersucht, wie grüne Investitionen, insbesondere erneuerbare Energien in Afrika, finanziert sind. Entlang einer illustrativen Einzelfallstudie innerhalb der südafrikanischen kompetitiven Wettbewerbsverfahren für erneuerbare Energien – South African Renewable Energy Procurement Programme (REI4P) - werden die Eigentumsstrukturen und Verbindungen zu transnationalen Kapitalklassen und Private Equity aufgezeigt. Der Artikel befasst sich*

mit der Forschungslücke von Ökologie und Klassenproblemen in der kritischen Internationalen Politischen Ökonomie. Dabei wird deutlich, dass koloniale Beziehungen in der grünen Wirtschaft und im Finanzwesen fortbestehen.

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