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The political economy of energy transitions in Africa: Coalitions, politics and power in Tanzania

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ABSTRACT

The understanding of the political economy of energy transitions in lower-income African countries is little developed. A focus on coalitions has emerged as a promising approach, but it was largely developed based on experiences from higher-income countries. This article has two interrelated purposes. First, it explores and develops the coalition approach to the study of the prioritisation between energy sources in lower-income countries by combining it with a political settlement framework that has been adapted to analysing energy transitions. Secondly, it researches the promotion and implementation of non-hydro renewable energy in mainland Tanzania as a case. The article covers the period from 2008, when the first potent coalitions around private non-hydro renewable energy emerged, up until today. Until recently, these coalitions were overtaken by stronger coalitions around state-owned gas and hydropower. Only with a new president and administration in power and a donor that was pragmatic with regard to state ownership did a large-scale solar plant materialize. Based on the Tanzanian example, the article argues first, that large-scale energy projects are of such importance politically that the analysis of coalitions at the sector level must take into account how these coalitions are embedded in a country's broader distribution of power. Secondly, that for renewable energy policies and projects to get implemented they must fit with the priorities and ideas about broader development held by a country's ruling political elite. A number of implications for the study of the political economy of energy transitions are further unfolded in the article.

1. Introduction

The idea that energy transitions, i.e. transitions to environmentally more sustainable forms of energy, are influenced by politics and power has come to be widely acknowledged [1–3]. A focus on coalitions has emerged as a promising approach to the study of the political economy of energy transitions, but it was largely developed on the basis of experiences from higher income countries [4–7]. However, the dynamics affecting the promotion of non-hydro renewable energy tend to be country- and context-specific [8]. Lower-income sub-Saharan African countries constitute a particular sub-category of cases characterized by limited public and private energy-sector capacity and varying degrees of informal relations that tend to influence energy-sector governance to a greater extent than in more developed economies [9–11]. This affects the relationship between energy policies promoting non-hydro renewable energy and their implementation where the stated objectives and targets are often not met [12]. It also poses a challenge to the coalition

approach, which has been criticized for paying more attention to the making of policies and instruments promoting new forms of renewable energy like solar and wind than to their implementation [13].

This article has two interrelated purposes. First, it explores and develops the coalition approach to the study of the prioritisation of different energy sources in lower-income countries by combining it with a political settlement framework [14,15] that has been adapted to analysing the political economy of energy transitions. Secondly, it researches the promotion and implementation of non-hydro renewable energy in mainland Tanzania as a case. Based on the Tanzanian experience, the article concurs with burgeoning research on emerging economies showing that the implementation of non-hydro renewable energy cannot be understood in isolation but requires analyses of the dynamics of the other major sources of energy in the energy mix [16,17]. Mainland Tanzania has for decades had policies aimed at developing non-hydro renewable energy in line with its ambition to diversify supplies away from large-scale hydro. However, little has been

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implemented on a larger scale [18,19]. Instead, the country first expanded the production of energy based on domestic natural gas, which reached 61 % of the energy mix by 2021,¹ mirroring similar trends in a larger group of fossil fuel-rich Sub-Saharan African countries [20]. Later, it also embarked on the expansion of large-scale hydro-power generation, which made up 39 % of the energy mix by 2021 and is projected to increase significantly in the coming years.

Drawing on analyses of coalition dynamics with implications for Tanzania's energy mix over the last decade and a half, the article puts forward two arguments. First, large-scale energy projects in lower-income countries are of such importance politically that the analysis of coalitions at the sector level must take into account how these coalitions are embedded in a country's broader distribution of power. In Tanzania we can observe coalitions emerging consisting primarily of Western donors and some private- and public-sector actors and focused on the promotion of non-hydro renewable-energy policies and private projects. Until recently, however, these coalitions were overruled by stronger coalitions that included the top levels of the Tanzanian government, who opted to expand first state-owned gas and later hydro-power projects. In a country with fairly centralized decision-making like Tanzania, that also means involvement of the president. Generally, sustainability and combating climate change have been promoted by some donors, but do not appear to have been major concerns domestically.

Secondly, therefore, the paper argues that for non-hydro renewable energy policies and projects to move to implementation there must be a fit with the priorities and dominant ideas about broader development held by a country's ruling political elite. In Tanzania, the decision to opt for gas and hydro mega-power projects was shaped by coalitions aligned with ruling politicians' resource-nationalist ideas about the state promoting economic and social development through cheap domestic energy. For a long time, these ideas were not conducive to coalitions promoting private non-hydro renewable-energy projects. Whereas significant shifts in priorities can be observed that to some extent coincided with the changes of presidents and administrations, in Tanzania energy-sector development is characterized by a *de facto* preference for large-scale, state-owned projects that are deemed less politically and managerially risky than private ones. Most recently, a state-owned solar plant is materializing as the first large-scale non-hydro renewable-energy project in Tanzania. It was facilitated by a new president and administration that came to power from 2021, the involvement of a donor that was pragmatic with regard to state ownership and a project in the pipeline that was ready for implementation when additional capacity was needed.

A contribution of the article, therefore, is to demonstrate how a political settlement framework can be adapted to the study of the political economy of energy transitions in a lower-income country like Tanzania. Our framework combines a focus on coalition dynamics with attention to the roles of rents and rent-seeking, donors and development finance, and ideas, with an additional focus on resource endowments and energy security. The Tanzania case demonstrates how this can contribute to developing a better understanding of the relationship between policies promoting non-hydro renewable energy and their implementation. It suggests that ideas about how to ensure energy security tend to overlap with dominant political ideas about a country's broader social, economic and political development, all of which affect its energy mix. In Tanzania, recurrent power shortages due to drought encouraged politicized and often short-term decision-making that favoured large-scale, state-led projects, which in turn compelled public energy organisations to rewrite their strategies and plans. Since significant differences among countries exist when, for instance, it comes to ideological preferences and resource endowments, more comparative cross-country research is needed.

This article is based on a combination of a literature review, document analysis and empirical fieldwork in mainland Tanzania. Due to this being a little-developed field of research, process-tracing using an iterative research strategy [21] was conducted for two reasons. First, it allows for the creation of a number of historical chronologies that, when combined, can contribute to the analysis of the broader development of the political economy of Tanzania's energy transition. Secondly, it makes it possible to explore and develop the coalition approach, which can then be tested in other contexts. The prioritisation of non-hydro renewable energy compared to other types of energy was mapped through a review of energy policies and large-scale,² short-term projects (those to be implemented within a five-year timespan) in power-system master plans (PSMPs) (see [22]). Furthermore, analyses were conducted of changes in policies and procedures that affected the procurement of large-scale energy projects. The article's main emphasis is on the period from 2008, when the commitment to non-hydro renewable energy became more substantial, to the end of 2023. Fieldwork was conducted over several periods in 2022–23 and included around sixty interviews with private developers, donor representatives and public officials, which focused on the making of PSMPs, as well as the development of a number of non-hydro renewable-energy projects. In order to identify and analyse the role of competing coalitions, interviews focused on how projects and plans emerged, who supported or resisted them, why and how.

The rest of this article is structured as follows. The next section provides an outline of major developments in approaches to studying the political economy of energy transitions with a focus on conceptual developments that are relevant for lower-income countries. It is followed by first a brief outline of the main traits of Tanzania's political settlement and a brief background section on the period from 1992, when the dual agenda of energy-sector liberalization and the diversification of supplies away from hydro emerged. The fifth section analyses the emergence of coalitions behind wind projects in 2008, which, however, were hampered by significant ambivalence towards private producers and sidelined by a stronger coalition around state-led gas-infrastructure development that fitted better with the burgeoning resource-nationalist sentiments of Tanzania's ruling politicians. The sixth section analyses how the renewed potential for private non-hydro renewable energy in 2016 became linked to the return of commitments to energy-sector reform, which was derailed by a new president's radical resource-nationalist vision of fast-tracked development via large-scale hydro-power. The seventh section covers the period of the current President Samia Suluhu Hassan (2021–) that demonstrated an openness towards private renewable energy, which, however, soon was overtaken by state-led projects, including the implementation of the country's first large-scale solar project. In the final section, the implications of the Tanzanian case for the study of the political economy of energy transitions are discussed.

2. Conceptual developments in the study of the political economy of energy transitions in lower-income African countries

A focus on coalitions is a promising approach to analysing the political economy of energy transitions. Coalitions can be defined as coalitions that 'exist to develop and protect certain forms of public action' in a sector ([15], [23], see also p. 21 in). Such coalitions typically coalesce around a shared frame of reference, for instance, shared beliefs or shared discourses (for a prominent example, see [24]). In transition research, a focus on coalitions has often been used to research the potential for emerging coalitions promoting transitions to cleaner forms of

¹ On Tanzania's energy mix, see EWURA 2021, p. 12.

² Large-scale power generation dominates the energy mix in Tanzania, where less than 1 % of power was supplied by private mini-grids and off-grid systems respectively in 2021 (EWURA 2021, p. 12). 'Large-scale' means above 10 MW. Projects below 10 MW are covered by a different regulatory framework.

energy [4–6]. Whereas such contributions have contributed to a better understanding of policymaking, they have been criticized for struggling to comprehend real-world policy mixes and, relatedly, for paying more attention to the making of policies than their implementation [2,13]. As pointed out by Roberts et al. [1], some coalitions may also slow down transitions. This criticism is especially relevant in lower-income countries, where research has long pointed out that ‘implementation is a filter that often alters intended policy’ [25, p. 216].

Transition research from such contexts has indeed suggested that informal relations may play a greater role than in more economically developed countries [9]. This does not imply that it is irrelevant to research coalitions, though it does suggest that in lower income African countries there is reason to be aware of fixed assumptions about the frames of reference around which coalitions coalesce and how they influence the relationship between policy and implementation.

From the outset, the political settlement framework has as one of its points of departure that formal rules are generally less well-enforced in developing countries than in developed ones [14, p. 650]. A recent iteration of the framework by Hickey and Mohan (2023) focusing on state capacity to implement draws on a conceptualisation by Kelsall et al. of a political settlement as ‘an ongoing agreement among a society’s most powerful groups over a set of political and economic institutions expected to generate for them a minimally acceptable level of benefits, which thereby ends or prevents generalized civil war and/or political and economic disorder’ [15, p. 36–7]. It sees the political settlement as made up of a combination of first and foremost (i) the level of competition for political power (excluded elite groups vis-à-vis the ruling political elite), but also; (ii) its social foundation (social groups that the ruling elite relies on for control, e.g., businessmen, donors, and electoral constituencies), and; (iii) paradigmatic ideas about a society’s development that can be a central part of the ongoing agreement that binds powerful groups together in a settlement (Ibid p. 37ff).

This version of a political settlement framework sees the emergence of elite commitment and state capacity as the outcome of the interrelationship between the general political settlement in a country and the dynamics that are specific to the sector that is being studied.³ The latter is characterized by its own actors (and coalitions), ideas and logics, and governance arrangements (ibid). A core feature of political settlement analysis is the identification of the more powerful actors and coalitions that hold out in contests that influence or block outcomes vis-à-vis those that lose out [26]. In our case, of particular interest as an indicator of the relative strength of actors and coalitions is their influence on or control of implementing organisations like energy utilities and regulators. Though more actors and coalitions may seek to influence utilities and regulators, the latter’s relations with the ruling political elite are of particular interest. This is demonstrated in this article where struggles over the unbundling and privatization of the Tanzania Electric Supply Company (TANESCO) can be observed over all the studied periods, often overlapping with struggles over the prioritisation of different energy sources.

The political settlement framework by Hickey and Mohan comes with several implications for our research. *First*, the coalition dynamics that may affect the prioritisation of different energy sources must be understood in relational terms. Whereas rents and rent-seeking tended to be seen as integral to forging and upholding relatively fixed relationships between political and economic elites in Khan’s [27] early political settlement framework and the way it was applied in the following years, Hickey and Mohan’s bigger emphasis on ideas and social foundations implies more contingent processes that may involve other considerations and more actors. Though rents may remain important both at sector and political settlement level political efforts to

prevent rent-seeking may also occur.

Secondly, more attention should be paid to development donors and finance as important parts of the coalition equation in lower-income countries (see also 28; for similar attention to the role of donors in transition research see, [29–31]). In this paper, we do indeed see significant involvement of donors not only in promoting certain policies, but also in financing energy projects, whether through grants, loans or derisking instruments. We do, however, also see the degree of donor involvement change over time. *Thirdly* and relatedly, research into the promotion of particular approaches by donors has led to more attention to the competing ideas that may influence a sector’s development [28]. Ideas can be about sector-specific development – in our case, the choice of public vs. private and the selection of specific energy technologies – but they may also overlap with a political settlement’s paradigmatic ideas about social and economic development in society more broadly.

Fourthly, and coming out of our Tanzania case, we can observe how resource endowments – that is, the discovery and development of natural gas – significantly influence the interrelationship between a political settlement and coalition and transition dynamics at sector level. This may be due to the fact that the governance of natural resources and energy tend to influence the distribution of power and rents in a society to a greater extent than many ‘softer’ policies as observed by Lavers ([32], p. 13; see also, [33], [34]). Indeed, recent empirical findings suggest that the availability of oil and gas tends to influence the deployment of non-hydro renewable energy negatively [10,20,35]. In other words, we cannot look at non-hydro renewable energy in isolation but have to treat the choice between different sources of energy as an aspect of ongoing struggles between competing coalitions over the composition of the energy mix that may also influence a country’s political settlement dynamics.

Fifthly, we can observe how energy security – and to be more precise, ideas about how to address energy insecurity – also significantly influences the interrelationship between a political settlement and sector level dynamics. Historically, the notion of energy security centred around oil and gas, but it has increasingly come to encompass electricity as well [36]. A narrow understanding of energy security would focus on the availability of supplies, but the role of the government in ensuring supplies, ensuring adequate infrastructure and ensuring affordability are also important for the selection of energy sources (ibid.).

In sum, to obtain a better understanding of not only how policies are made but also whether and how they are implemented, we analyse how the interrelationship between the political settlement and sector level dynamics affects the prioritisation of different energy sources. As part of this, we pay particular attention to (i) the roles of rents and rent-seeking, (ii) international donors and finance, (iii) ideas, (iv) resource endowments and (v) energy security. Combined, this provides a framework for analysing the coalition dynamics of energy transitions.⁴ The relative importance of the five aspects mentioned above has to be established through empirical research into coalition dynamics in a sector that takes into account the distribution of power in a country more broadly. The control over implementing organisations like utilities and regulators is of particular interest in this regard.

As demonstrated in the coming sections, the influence of actors and coalitions thus change over time, along with the relative importance of the five highlighted aspects. In order to identify and analyse such shifts, each of the article’s three main empirical sections are structured around major periods in which we can observe (i) significant shifts in policies and plans which have the potential to affect the promotion and

³ Termed a ‘policy domain’ to emphasise the bigger analytical interest in power relations than typically implied in the term ‘sector’ (Hickey and Mohan 2023 p. 40).

⁴ The framework thus comes with fewer assumptions about the centrality of energy technologies than a similar focus on utilities and regulators in transition research. The latter derive from the influential multi-level perspective (MLP) research tradition, which increasingly aims at unpacking and analysing ‘regime resistance’ linked to ‘old’ fossil-fuel energy technologies that have hindered the emergence and growth of non-hydro renewable energy [16,17,37–39].

implementation of non-hydro renewable energy; (ii) significant shifts in priorities in terms of what gets implemented, with a particular focus on the selection of energy sources and technologies; and (iii) how coalition dynamics can explain the potential differences between stated policies and plans and their implementation. The latter will focus on coalition dynamics at the sector level and include the broader political settlement dynamics in Tanzania when relevant for understanding the choice of energy projects. Each section will also analyse and discuss variation within a given period. However, first, the main traits of Tanzania's political settlement as well as some core energy sector dynamics are outlined in the next two sections.

3. Main traits of Tanzania's political settlement

Tanzania's political settlement is characterized by the continuous rule of Chama Cha Mapinduzi (CCM) in various forms since independence in 1961. Under a long period of one-party rule under the leadership of Tanzania's first president, Julius Nyerere (1962–85), paradigmatic ideas about African socialism and self-reliance were pursued with the state playing a key role in owning many companies and driving the economy [40]. Due to a combination of economic crisis and pressure from Western donors, who were important financiers, liberalization gradually set in. Structural adjustment reforms were agreed with the IMF in 1986 under the leadership of the newly elected President Ali Hassan Mwinyi (1985–2005), who however struggled with implementation due to internal resistance among traditionalist factions in the ruling party and government backed by his predecessor [41]. Later, political liberalization was initiated with the first national multi-party elections being held in 1995 but CCM never completely gave up on its control of society and elections have never been completely free and fair.

The elections in 1995 brought to power the market-friendly President Mkapa (1995–2005), who soon reached an agreement with the donors that had frozen aid due to dissatisfaction with rent-seeking and the slow pace of liberalization. The agreement implied renewed commitment to implement reforms in return for continued aid and less direct interference by donors [42]. This gave Mkapa a freer hand to pursue growth through Foreign Direct Investments (FDI) and the private sector. Another result of multi-party elections was the strengthening of ties between CCM and domestic capitalist who were believed to have become important financiers of election campaigns in return for rents, for instance in the form of tax exemptions [43]. However, these developments also contributed to tensions within CCM. One division was over ideology where parts of CCM remained skeptical towards the private sector and this contributed to the slow pace of privatization of state-owned enterprises, including of the Tanzania Electric Supply Company (TANESCO). Another was over the relation between money and politics.

Factionalism in CCM intensified during the early years of President Jakaya Kikwete's presidency (2005–15), and the opposition gained strength by campaigning on corruption scandals and allegedly shoddy deals in the mining sector and, as we shall see, in power production [44]. One response was more emphasis by Kikwete and his allies on reforming the party through a clearer separation of money and politics [43]. Due to internal resistance, this agenda only moved closer to implementation broadly after the historically competitive elections in 2010 [45]. Another response was the continued expansion of social services that increasingly targeted Tanzania's rural majority prior to elections [46]. Whereas many larger cities became opposition strongholds CCM remained strong in rural areas. Popular was also the ruling elite's gradual embrace of resource nationalist ideas about enhancing domestic benefits from extractive resources. This got a poignant expression in a new Mining Act in 2010 which increased taxation and state participation in mining. Partly overlapping and related to the advent of China as a development donor a broader shift in ideas towards granting the state a bigger role in the economy, albeit still with a focus on unlocking private investments, became visible with the publication of a five year

development plan in 2011 [47]. This was the first of its kind since the socialist period.

In the run-up to the 2015 elections, factionalism in CCM led to the disqualification of the frontrunner as CCM presidential nominee, Edward Lowassa, who defected and became the candidate of Chama cha Demokrasia na Maendeleo (Chadema), the main opposition party. Lowassa had been tainted by one of the mentioned corruption-scandals in energy and was perceived to be a threat to the ruling party's legitimacy by party grandees. The historically competitive elections brought to power John Pombe Magufuli (2015–21), a compromise candidate, who ran on a populist ticket of siding with ordinary people and party members against a corrupt elite [46]. Magufuli centralized power and sidelined and repressed critics within and outside the party. Resource nationalist ideas became more radical under Magufuli, who sought to fast-track economic development through state-owned and large-scale infrastructure and enterprises, harking back to ideas from the period of African Socialism and self-reliance. While relations with Western donors soured and China and Chinese companies were also being sidelined, more emphasis was put on mobilising domestic resources through, for instance, taxation.

With Magufuli's premature death in 2021, vice-president Samia Suluhu Hassan came to power. She is generally believed to be closer to the previous President, Kikwete, who had first made her a minister. She soon initiated the opening up of political space, including to the opposition, which had been almost eradicated at the repressive 2020 elections. She also signalled a return to ideas about more market-led development through the private sector and FDI. Relations with donors generally improved. However, as factionalism continued in CCM she had to bring back in or promote some Magufuli-loyalists and the de facto commitment to political and economic liberalization remains unclear [48]. As we shall see in the following sections, these tensions in Tanzania's political settlement over centralisation and factionalism, domestic and foreign, and state versus private, which we can observe throughout Tanzania's modern history, interrelates closely with developments in the energy sector and also came to influence the country's energy transition trajectory.

4. Background: Diversification and the emergence of a new coalition around gas amid uneasy liberalization and rent-seeking 1992–2008

Nascent coalitions around non-hydro renewable energy emerged in the late 1970s, mostly in the form of NGO demonstration projects supported by Western donors [49]. In the mid-1980s, some government buy-in can be observed with the establishment of a German-supported Renewable Energy Division in the Ministry of Water, Energy and Minerals, which, however, focused on charcoal. A new Energy Policy in 1992, again supported by Western donors, suggested that change was underway in two ways. One was the intention to improve energy security by diversifying supplies away from hydro and develop other domestic sources of energy. Wind and natural gas were highlighted [50]. This focus on developing domestic sources remained a priority for Tanzania's political elite over the following decades. The other was the commitment to reform of the energy sector by unbundling TANESCO into separate units and opening up for private companies [51]. As in many other developing countries, this was a standard reform model that at the time was being pushed aggressively by the World Bank [52, p. 42]. The combined agenda of improving energy security, potentially through including wind, combined with liberalization, indicates the emergence of a coalition between Tanzanian decision-makers and Western donors.

However, the new coalition was marred by tensions and the agenda was implemented rather selectively. As shown in Fig. 1 below, it was natural gas, not wind, that was developed in the following years. This had been a priority in the ruling political elite ever since gas was first discovered in 1974, a period of energy insecurity due to global oil crises but finds had not been commercially viable and shifting governments

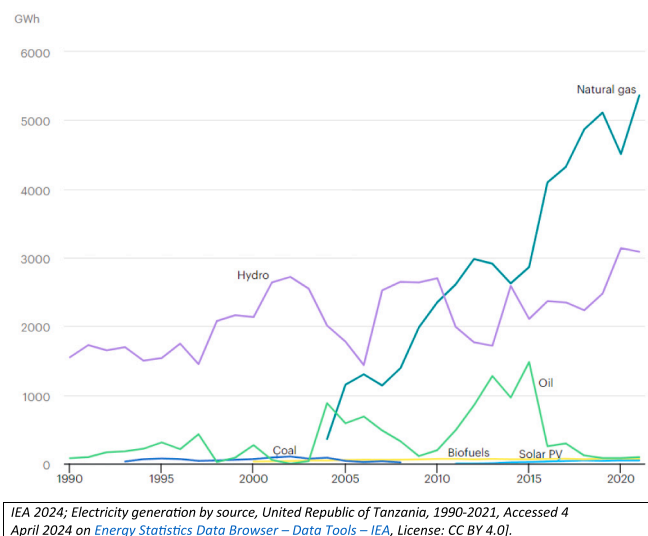


Fig. 1. Electricity generation by source 1990–2021
IEA 2024; Electricity generation by source, United Republic of Tanzania, 1990–2021, Accessed 4 April 2024 on Energy Statistics Data Browser – Data Tools – IEA, License: CC BY 4.0.

had not been able to mobilise the resources to develop it for the domestic market. This changed with the Songo Songo gas-to-electricity project, which began moving towards implementation as a private Independent Power Producer (IPP) project in 1993 and was being pushed by a new coalition that involved Western donors around privately produced gas-to-electricity generation. The Songo Songo project involved gas production along the Indian Ocean coast, a pipeline and gas-to-electricity generation in Dar es Salaam. It was structured as a joint venture between TANESCO, the national oil company (Tanzania Petroleum Development Corporation, TPDC) and private foreign companies, and it received significant donor support [53]. The structure was a compromise between the Tanzanian government side, particularly the utilities, which had wanted it to be owned by the government, and a number of Western donors headed by the World Bank, who wanted it to be privately owned (interview with former government representative, 19 August 2016).

However, tensions in the emerging coalition around gas ended up delaying the Songo-Songo project significantly. A scandal involving rent-seeking began unfolding related to a power purchase agreement (PPA) with the Independent Power Tanzania Ltd. (IPTL), an IPP. The PPA for a private emergency diesel-fuelled power plant had been entered into with IPTL in 1995 after a prolonged drought. IPTL had been proposed by the Malaysian Mechmar Corporation and a local Tanzanian businessman, who reportedly facilitated the project by paying bribes to officials and politicians [51,54]. The deal emerged without any tendering process and contributed to souring relations with Western donors. In 1997, when it became clear that IPTL was about to overtake the Songo Songo project, the World Bank put its support for the latter project on hold over what it regarded as a breach of agreements [55]. The IPTL project was seen as an example of rampant rent-seeking in Tanzania at the time [56]. Its power production was more expensive than similar IPPs in East Africa, which led to court cases and a generally bad reputation for IPPs in the following years. The Songo Songo project only began production in 2004.

Generally, it was an uneasy coalition around privately produced gas-to-electricity that emerged due to diverging ideas within the ruling party and government organisations about liberalization that included the status of TANESCO. As outlined in the previous section, Tanzania's ruling political elite headed by President Mkapa had officially embraced reforms supported by Western donors but parts of the ruling party, as well as the state-owned enterprises, preferred state ownership as

representing a continuation of ideas from the country's socialist past [40]. The ambivalence towards liberalization thus came to influence implementation of the standard reform model in the energy sector. TANESCO was only earmarked for privatization in 1997.

As late as in 2002 Mkapa, in a speech to donors, reiterated the general commitment to reform but did not hide the fact that there was resistance within the government and party: 'We are now moving on to the privatisation of the remaining large public enterprises and public utilities. This is proving to be a complex and slow process, because of the need to educate and sensitise all stakeholders (...) Despite these snags, the government is determined to stay the course' [57, p. 525]. The government did stay the course, but in the energy sector that course continued to be one of partial implementation. On the one hand, there were signs that implementation started moving when a South African company won a management contract for running TANESCO in 2002. In 2004, a PPA was entered into with another IPP, Artumas, for a small gas-to-electricity project in Mtwara in the southeast of Tanzania. Despite resistance from the Ministry of Energy and TANESCO, the project was pushed through by Mkapa, who was from the Mtwara Region, and it received financial support from the Dutch FMO [58].

On the other hand, the unbundling and privatization of TANESCO never happened. In 2005 TANESCO was taken off the privatization list and it was decided not to extend the management contract [59]. Given the fact that the speed of the privatization of state-owned enterprises had been picking up, this is remarkable. This could be seen as a sign of veto power of TANESCO and those in the ruling party supporting its continued status as state-owned. Indeed, in the wake of a supply crisis from 2003 to 6, a couple of government-owned gas-fired plants began materializing, financed by a combination of government and Western donor support, particularly the Dutch FMO [51, p. 20]. Notably on this occasion, the World Bank was not involved. More likely, however, these measures were linked to short-term energy-security concerns after the drought, which had left TANESCO's finances in a dire state. The delisting allowed more effective government support for the struggling company and helped fast-track procurement of the new plants (ibid.). The standard reform agenda reappeared with a draft Electricity Bill in 2006.

5. Ambivalence towards private large-scale non-hydro renewable energy projects amid diverging ideas among key Tanzanian decision-makers (2008–2016)

Whereas the pre-2008 period had seen the emergence of a coalition around gas-to-electricity generation, little had happened in terms of the deployment of non-hydro renewable energy. In 2008, several developments suggest that more potent coalitions around non-hydro renewable energy were underway. The legal framework was reformed along the lines of the standard reform model towards unbundling and increased private-sector participation, and it provided a firmer basis for the private developers of large-scale wind projects that also emerge. However, although these developments were supported by western donors, no wind projects materialized. First, the period is generally characterized by a continued ambivalence towards private projects as efforts to control rent-seeking in the energy sector intensified, fuelled by another major corruption scandal that had involved private investors.. Secondly, the coalition around gas-to-electricity was reconfigured due to the discovery of large new gas deposits. Whereas Western donors increasingly favoured cleaner forms of energy, Chinese and Japanese finance had become available, allowing the pursuance of ideas in the ruling political elite about granting the state a bigger role in facilitating development. The further development of gas was also spurred by another power crisis due to drought (2010–13) that led the government to implement a state-owned gas pipeline and power plants to address energy security at short notice. However, the standard model reform reemerged with provisions for the competitive procurement of energy projects in line with World Bank priorities. When towards the end of the period low CO₂ emissions became one of the criteria for selecting

projects, the potential for private, large-scale, non-hydro renewable energy projects reached an all-time high.

5.1. Emerging non-hydro renewable energy coalitions are undermined by efforts to control rent-seeking

In 2008, several developments indicated that more potent non-hydro renewable energy coalitions were being formed. A new Electricity Act of that year provided for ways of potentially helping diffuse renewable energy. First, it provided a firm basis for rural electrification by mandating the minister to prepare a plan that included non-hydro renewable energy off-grid [60]. Secondly, it marked a renewed commitment to the standard model reform by mandating the Minister to prepare for the unbundling of TANESCO and subjecting the sector to competition (*ibid.*, para. 6 [1]). It therefore also provided private developers with a firmer basis for developing projects. A new coalition around a combination of rural electrification, renewable energy and private developers had already emerged prior to the passing of the Act involving the government and Western donors, who also facilitated the making of the Act. Swedish SIDA, a longtime major donor to Tanzania's energy sector, had been involved in setting up a Rural Energy Agency (REA) and had the promotion of renewable energy as one of its priorities. The World Bank, through the support for a new 'Energy Development and Access Expansion Project' in 2007, also increasingly promoted renewable energy through market solutions. The government's commitment to reform was confirmed with incentives for renewable energy produced by smaller power producers under 10 MW, which was supported by donors the following year.

Also in 2008, Wind East Africa, the first of at least three large-scale private wind projects that had emerged, was officially registered with the Tanzanian Investment Centre (TIC) and was included in an updated Power System Master Plan the following year (interview with government official 16 March 2023; [61]). This was one of the nascent coalitions behind private wind projects that had emerged in the mid-2000s, drawing on wind measurements that had been conducted by TANESCO with support from the Danish Danida. The Wind East Africa project was headed by Six Telecom, a domestic telecom company owned and managed by actors from the Tanzanian business elite, which first teamed up with a UK-based developer, Aldwych, and later got the IFC, the World Bank's private-sector arm, on board as a partner [62,63]. One of the owners of Six Telecoms was the then Director of the publicly owned Tanzania Investment Bank, and another partner reportedly had close connections with Vice-president Bilal (2010–15), who also took part in a ground-breaking ceremony in 2015 [63]. The project had the support of the British government [64].

This peculiar mix of public and private interests in the Wind East Africa project was not unlike the other early projects that emerged at around the same time. They had typically been initiated by politically well-connected domestic businessmen who had formed coalitions with other domestic and foreign investors and donors. Another of the early wind projects, Power Pool East Africa, was promoted by its 'private' owners, among whom were influential ruling party members of parliament (MPs) (interviews with former government representatives, 21 October 2022 and 13 March 2023). The latter had teamed up with two state entities, TANESCO and the National Development Corporation (NDC), in a public-private partnership (PPP) called Geowind, the aim of which was to obtain funding from the Chinese Exim Bank. By involving TANESCO, Geowind was the wind project that got the furthest because this helped it obtain a power purchase agreement (PPA) in 2013 as the first of its kind for a large-scale renewable-energy project. Tellingly, the wind project that struggled the most, SinoTan, was also the one whose owners were less well-connected to political and bureaucratic elites.

Whereas rural electrification gained in pace primarily by extending the grid in the following years, the standard reform model elements of the Electricity Act were implemented selectively and with little room for private projects, including the wind projects mentioned above. This was

influenced by the focus of President Kikwete (2005–15) on controlling rent-seeking in the energy sector. This had been reinforced in 2008, when a corruption scandal forced Prime Minister Edward Lowassa and the Minister of Energy to resign after a parliamentary committee had uncovered evidence of malfeasance related to a tender for a 120 MW (MW) emergency gas-to-electricity project. The contract had been awarded to the Richmond Development Company, a shell company with no previous power-generating experience, after interference by the Prime Minister [54]. The scandal fuelled the campaign activities of the political opposition, which, in an increasingly competitive electoral environment, accused the ruling party of being responsible for shady deals. However, the Richmond scandal also allowed Kikwete and his allies to seek more control over rents and rent-seeking in the following years [65].

Kikwete was generally favourable to private investments, but in the year of the Richmond scandal he also stated that he wanted to see a clearer separation of money and politics. Whereas he, as outlined in the section on Tanzania's political settlement above, struggled to implement this agenda generally, in the energy sector, Kikwete could use his executive power and was very supportive of the newly established Energy and Water Regulatory Authority (EWURA), which was also given a basis for operation under the 2008 Electricity Act. EWURA was tasked with protecting customers' interests, which included regulating prices and thereby curbing the rent-seeking of powerful actors that Kikwete could not otherwise control with a ruling party riven by internal factions [56,65]. However, these developments contributed to renewed ambivalence towards private-sector involvement in the energy sector. This was exemplified by the failure of Artumas, a private foreign company that had developed an integrated gas-to-power project in Mtwara, to obtain EWURA approval of the tariffs it submitted in 2008 [58]. The lack of agreement with EWURA led to the collapse of Artumas and the subsequent takeover of its power plant by TANESCO. The development of the proposed large-scale wind projects was rarely completely stopped by the authorities, but they received limited support from government agencies and gradually ground to a halt.

5.2. The reemergence of ideas about state-led development and the reconfiguration of the gas-to-electricity coalition before renewed commitment to the standard reform model

Whereas no policies were changed, the signing of contracts for the construction of a mega gas pipeline from Mtwara to Dar es Salaam in 2012 was testament to the reconfiguration of the coalition around gas-to-electricity. Several concurrent developments had enabled the project, some of which overlapped with new dynamics in Tanzania's political settlement. First, the discovery of large-scale offshore gas deposits in 2010 coincided with a major drought that had almost halved the country's power production by 2010/11 [66]. Secondly, China had emerged as a new major donor in the previous years and proved willing to provide a loan for the pipeline. As a result, the World Bank, which had hitherto been the dominant donor to Tanzania's energy sector, but which rejected the project, was sidelined. Thirdly, in the ruling political elite, resource-nationalist ideas about increasing the country's benefits from its natural resources had emerged in the extractive sectors and spilled over into the power sector [58]. The USD1.2 billion mega gas pipeline had not featured in previous master plans for the power system. It was promoted by the national oil company (TPDC) and the Ministry of Energy and Minerals as a measure to address energy insecurity.

The pipeline project became part of a reconfigured coalition around the implementation of gas-to-electricity when it received backing from the entire government, including the President (interviews with former and current government official, 19 August 2016 and 8 November 2023). The reconfigured coalition also implied shifting ideas about the relationship between public and private. With the emergence of China as an alternative to Western donors and domestic gas available, Tanzanian decision-makers could pursue ideas about long-term planning and a

bigger role for the state in facilitating economic and social development more freely [47]. The gas pipeline was expected to serve the dual purpose of improving energy security and facilitating industrialization through the supply of cheap and reliable energy. It was to be owned by the state through TPDC, and the gas was to be developed ‘in order to accelerate broad-based growth and socio-economic transformation’ [67].

However, significant ambivalence in decision-making continued to influence energy-sector development, including the prospects of the coalitions behind private power projects like those in wind described above. On the one hand, the gas pipeline de facto strengthened the role of the state and entrenched the role of gas in the production of electricity. The first new power projects to materialize subsequently were two TANESCO-owned gas-to-electricity projects, Kinyerezi 1 and 2. Kinyerezi 1 started operations in 2015–16 funded by a commercial loan. Kinyerezi 2 began construction in December 2015 funded primarily by a loan from Japan’s Bank for International Cooperation [68,69]. On the other hand, concurrently with the construction of the pipeline (2013–15), a renewed commitment to the standard model energy reform was signalled in 2014 in a new Supply Industry Reform Strategy and Roadmap (2014–2025). The Strategy was a sign that, even though state dominance in power production became a consequence of the decision to construct the gas pipeline, that was not necessarily the intention at the time.

The main priority in Tanzania’s ruling political elite was rather to facilitate economic growth, and the private sector was envisaged as continuing to play a role in this. The Strategy contained a fresh commitment to unbundle TANESCO and open up for IPPs, which were to be procured competitively in a ‘fully competitive electricity market structure by 2025’. It envisaged a massive increase in power production, from around 1500 MW at the time of its passing to 10,000 MW in 2025 [70,p. 9]. This included both solar and wind projects on a larger scale as part of efforts to improve energy security by diversifying supplies. Tanzania under the leadership of Kikwete also increasingly portrayed itself as in support of international climate change mitigation [71]. The reform moves were generally spearheaded by the Minister of Energy, Sospeter Muhongo (2012–15 and 2016–17), who regarded a competitive electricity market as a way to curb rent-seeking and corruption (interview with expert and former government representative, 3 March and 9 March 2023). The World Bank also saw the 2014 Strategy and the Electricity (Market Re-Organisation and Promotion of Competition) Regulations, which were published at the end of 2016 and provided for a re-organisation of the electricity market [72], as an outcome of its support for gas and power sector reform that had begun in 2013 [73].

Whereas the new Regulations confirmed the government’s commitment to reform, in practice they also contributed to eventually sidelining the ‘old’ wind projects that had been promoted as unsolicited bids, the hitherto predominant avenue for private and semi-private projects. The project that got the furthest, Geowind, did not materialize as the government withdrew from guaranteeing the project’s loan from Exim Bank in 2016. With the new Regulations, projects were to be procured competitively through tenders. Also in 2016, a new Power System Master Plan for the first time included the environment in the form of low CO₂ emissions as one of the criteria for the selection of projects [74]. Previously, greater emphasis had been placed on costs, reliability and availability as the main criteria [22]. On paper, the potential for the emergence of a coalition that could move non-hydro renewable energy to implementation was at an all-time high. Soon, however, energy-sector development was being overtaken by new coalition dynamics.

6. A new coalition around large-scale hydro derails non-hydro renewable energy (2017–21)

Whereas the potential for private, large-scale non-hydro renewable energy projects was at an all-time high at the beginning of the period, no projects materialized. Without changing major policies on electricity,

the coalition dynamics changed decisively as a new President began to pursue radical resource-nationalist ideas about fast-tracking development through cheap energy for industrialization and the rural poor. He therefore centralized power by shifting leadership in the energy sector and pushing through his own priorities, which included a major role for state-owned enterprises in driving the economy, as well as a state-owned mega hydro-dam, the Julius Nyerere Hydropower Project (JNHPP). This was a new and highly centralized coalition around large-scale hydro. The Project was a significant deviation from past policies and plans’ emphasis on diversifying the energy mix away from hydro. With no funding available from donors on what the President deemed reasonable terms and relations with donors generally souring, the JNHPP was financed from commercial lending and the mobilisation of domestic resources. However, almost concurrently with the dam project, a tender for private, large-scale, solar and wind was announced. The tender was something of a mystery, given the President’s preference for state-owned projects, and various theories exist about why this route was chosen. Not surprisingly, processing the submitted tender bids got caught up in the government apparatus.

6.1. *The potential for a coalition around non-hydro renewable is undermined by ideas about fast-tracking development through large-scale hydro*

At the end of 2016, the prospects of coalitions promoting large-scale non-hydro renewable energy in Tanzania had improved. First, the introduction of competitive procurement that year was generally expected to help bring down costs, which in turn is believed to be an important element in the transition to cleaner forms of energy (see, for instance, [75], [76]). Secondly, carbon emissions had become a criteria for the selection of projects in Tanzania’s energy-sector planning, which also listed a potential large-scale solar plant for the first time [74]. Though Muhongo, the Minister of Energy and Minerals, was not necessarily pursuing decarbonization, as his focus on also promoting coal demonstrated, he was in favour of diversifying the energy mix away from hydro, as well as competitive procurement to curb rent-seeking. As several new large-scale wind projects headed by international developers and backed primarily by bilateral Western donors emerged around the same period, the contours of a potential coalition around implementing non-hydro renewable energy gradually became clearer. Soon, however, and overlapping with changes in the political settlement the coalition dynamics changed decisively without any change in policies in the electricity sector.

A first sign that new coalition dynamics were at play was the firing of TANESCO’s director on 1 January 2017 over raising electricity tariffs. Raising tariffs had been one of the measures agreed between the government and the World Bank to improve TANESCO’s viability and attract private investments. The utility had been allowed to raise tariffs by 8.5 % by EWURA, the regulator. The increase was significantly lower than had been applied for, but still too much for the new President, John Pombe Magufuli (2015–21). Being elected as a compromise candidate in the ruling party, Magufuli had treaded carefully at first, but as his dismissal of TANESCO’s director made clear, this was changing as he increasingly pursued the elements in the ruling party manifesto and Tanzania’s development plans that fitted with his ideas. As he stated when he fired the director, ‘There is no way we can establish strategies on how to build industries, especially plans to distribute electricity to the rural areas to be used by poor people created in God’s image...and then someone hikes the power tariffs the way he likes, just because he is in a position to do so. This is unacceptable’ [77]. The quote demonstrates some of the core tenets of what came to dominate energy-sector development under Magufuli, namely efforts to reinforce the ruling party’s link with the popular, predominantly rural constituencies, combined with attempts to fast-track industrialization through cheap energy [44,46]. The President had indeed been complaining about the rents and associated high tariffs generated by IPPs [78].

The single event that came to shape energy-sector development the most was the decision in 2017 to construct the 2100 MW JNHPP (initially Stiegler's Gorge Project, later renamed after Tanzania's first President, Julius Nyerere). The Project would more than double power-generating capacity in the country. It had featured in earlier Power System Master Plans, but it had not been among the short-term priority projects that we see as a sign of government commitment. Nor had its implementation been envisaged as one project but rather as broken up into phases [74]. The energy insecurity that had fuelled large state-led projects previously could not explain the emergence of the mega dam. There had been scattered reports of looming power shortages at the end of 2016 and early 2017, but not on a scale comparable with the supply crises of the past. Above all, the JNHPP was a revival of a project harking back to ideas from Tanzania's socialist past when the dam had been promoted as part of ideas about state-led industrialization [79].

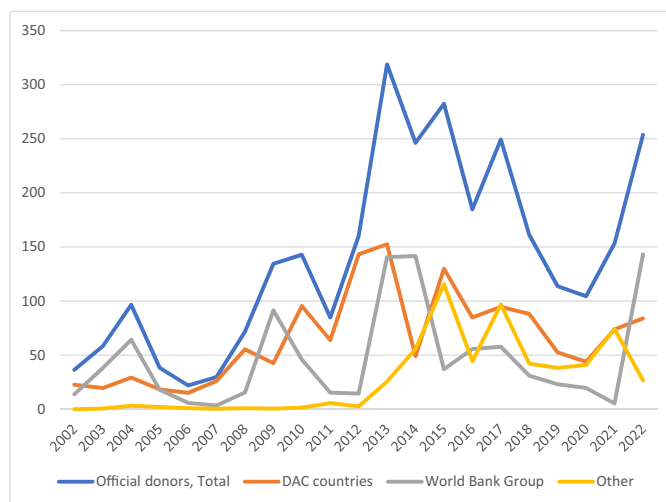
The government-owned JNHPP embodied Magufuli's vision of fast-tracked state-driven development through large-scale infrastructure. What had emerged was a new and highly centralized coalition around large-scale hydro power. The path for the Project was paved by the dismissal in May 2017 of Minister Muhongo, who had pursued diversification away from hydro, after a row with the President over industrial policy in the mining sector. Muhongo was replaced by the President's close ally, Medard Kalemami, an MP who had succeeded Magufuli in the Chato constituency. The appointment of Kalemami announced a centralisation of power that gradually became more and more visible. One power-sector expert observed that 'During Magufuli there was no such thing as ministries. The power lay with the President' (interview with energy-sector expert, 3 March 2023). TANESCO, fearing cost overruns and delays, had been against the project, but eventually it had to toe the President's line (interview with former government representative, 21 October 2022).

Funding for the Project had been sought from both the World Bank and the AfDB, which both rejected it, officially out of environmental

concerns (it was to be constructed in the protected Selous Game Reserve; [80]). By then the World Bank had also just cancelled the third of a series of USD100 million transfers aimed at recapitalizing TANESCO due to slow implementation of the agreed commitment to procure power from private producers. As noticed in the Bank's results report from December 2017, the Kinyerezi gas power plants (see above) had ended up being state-owned and 'the Government's policy toward private sector participation in future generation projects is unclear' [73,p. 13]. Generally, the relations with Western donors soured further, as evidenced in Fig. 2 below, and China and Chinese companies were also being sidelined as Magufuli was dissatisfied with the terms they offered [81]. In 2018, it was decided to construct the Project using the government's own resources with co-financing from the chosen Egyptian constructors via bank loans [82,83]. In line with Magufuli's increasingly autocratic tendencies, opponents were heavy-handedly sidelined. Members of Parliament who raised concerns about the project were told that it would be implemented whether they liked it or not and that those resisting it would be jailed [84].

6.2. The sudden revival and gradual fall of private, large-scale, non-hydro renewable energy

Towards the end of 2018, at around the same time as the financing for the JNHPP was secured, tenders for private solar, wind and coal projects were announced [85,86]. Given the mega-hydropower project that was underway and the President's known preference for state-owned projects, the tenders are a mystery. Interviewees had many theories about why the tenders were published, none of them conclusive. Some suggest that this was a process that had been set in motion long ago, referring to the Supply Industry Reform Strategy, the Roadmap in 2014 and the tender regulations in 2016, which had just not been stopped in time. A donor representative speculated that maybe it was the Ministry of Energy that had pushed for the tenders to test the markets,



The figure shows the trajectory of the disbursement of development assistance given to Tanzania's energy sector. 'Official donors' include all donors reporting to the OECD. The three other lines depict the development in aid from some of the main donor groups, first and foremost OECD DAC countries (developed economies) and the World Bank Group, which combined can be regarded 'Western' donors. Under 'other', the AfDB becomes increasingly important over the period. China has not reported its aid data to the OECD and is therefore not included. The figure is based on data from OECD's Creditor Reporting System, accessed in March 2024 at www.stats.oecd.org.

Fig. 2. Development assistance for energy in Tanzania

The figure shows the trajectory of the disbursement of development assistance given to Tanzania's energy sector. 'Official donors' include all donors reporting to the OECD. The three other lines depict the development in aid from some of the main donor groups, first and foremost OECD DAC countries (developed economies) and the World Bank Group, which combined can be regarded 'Western' donors. Under 'other', the AfDB becomes increasingly important over the period. China has not reported its aid data to the OECD and is therefore not included. The figure is based on data from OECD's Creditor Reporting System, accessed in March 2024 at www.stats.oecd.org.

knowing from meetings with TANESCO that the utility's new leadership was against IPPs (interview with donor representative, 6 May 2022). Finally, some suggest that pressure from Western donors headed by the World Bank could have played a role: 'They had no interest in private-led projects. But they have relations with donors, so they leave it ambiguous' (interview with energy sector expert, 3 March 2023).

Irrespective of the real motives behind the tenders, the bottom line is that nothing came out of them under Magufuli's state-centric coalition around large-scale hydro. After a process with procedural hiccups and delays, a large number of developers, reportedly around seventy in renewable energy, expressed an interest. Several were subsequently asked to submit proposals, which happened in February 2020. However, then the process stalled again. This time, it was because the documents were stranded in the Ministry of Finance, where they had been sent for approval. A government representative confirms: 'In the tender, there was interference from the Ministry of Finance. Everything coming in or out that affects [government] finances should involve the Ministry of Finance' (interview with government representative, 4 November 2022). By then, the Ministry of Finance was controlled by another close ally of the President. No one in the government was pushing to get the submitted bids assessed and processed. Without changing any rules, the President's coalition around hydro thus managed to derail the tender. Meanwhile, other projects that were more in line with the prevailing priorities were emerging. In 2019, government finance had been allocated for a 185-MW TANESCO-owned extension to the Kinyerezi 1 gas-to-power plant, which could help bridge power needs while the JNHPP was being constructed [87].

7. The return of non-hydro renewable energy coalitions and a realignment with donors and development finance (2021-)

The period began with a couple of new state-owned projects, which emerged with funding from donors that had a more flexible approach when it came to the state ownership of electricity production. This included Tanzania's first large-scale solar plant, which signalled some continuity from the previous coalition in terms of a preference for state ownership, but also some change when it came to sources of energy. With another supply crisis underway due to drought, this also signalled the reemergence of energy security on the political agenda. Under a new president, Samia Suluhu Hassan, the leadership in the energy sector was soon replaced with people who were closer to the factions of the ruling party that had more liberal ideas about the country's development. The standard reform model agenda was revived. It had been remained part of stated policies but its implementation had been put on hold under the previous President. The solar and wind tendering process, where selected private bidders were supported by Western donors, was also revived. However, disagreements over the terms for private projects led to the tender being cancelled. Public-private partnerships with TANESCO co-ownership reemerges. These moves were also signs that resource-nationalist ideas may have become less intense but had not disappeared among ruling politicians and continued to influence coalition dynamics. They were also signs that the divisions in the ruling party, which in the past had contributed to the ambivalence towards private projects, had returned. Towards the end of 2023, the leadership in the energy sector shifted again. This coincided with the return of more people closer to the previous president in the ruling party and administration. The implications for non-hydro renewable energy in Tanzania are, as of yet, unclear.

7.1. The return of the standard reform model and the first large-scale solar project

The period of radical resource nationalist development came to an end with the premature death of President Magufuli and the ascent to power of Vice-President Samia Suluhu Hassan in March 2021. Again, no major new policies targeting the electricity sector were introduced. The

first projects to materialize were to be owned by TANESCO and could indeed be seen as signs. The first signing off of agreements in May 2021 was for the 50-MW TANESCO-owned Malagarasi hydro-power project [88,89]. It was funded through an AfDB sovereign loan, as well as additional funding from an AfDB-administered fund with resources from China. The second signing in June 2021 was for a project loan between the French Development Agency (AFD), the financier and the Ministry of Finance for another large-scale TANESCO-owned project, a 50-MW solar plant in Shinyanga.

In fact, however, coalition dynamics were changing. Perhaps the most noticeable changes were the return of development donors and finance as evidenced in the projects just mentioned, as well as the deployment of the solar project, the first large-scale non-hydro renewable-energy project to be implemented in Tanzania [90]. The project had first appeared as a priority project in 2016. AFD got involved in financing the early feasibility studies and already in 2019 AFD approved the financing of the project, which then got stuck in the Ministry of Finance until the new President had come to power. Soon, the signs of a potential reconfiguration of the dominant coalition became stronger. To some extent the shifting priorities reflected the re-emergence of energy insecurity due to drought and delays in completing the JNHPP [91]. However, they also reflected a shift in ideas among Tanzania's key decision-makers both in the energy sector and in the political settlement broadly.

In September 2021, the President replaced Minister of Energy Kalemani with January Makamba. Like Samia Suluhu Hassan, Makamba had first been brought to prominence by the more market-friendly President Kikwete, whom he served as a deputy minister. He had become Minister of Environment under Magufuli but had been fired in 2019. As Minister of Energy, Makamba announced a return to the standard model reform agenda of unbundling TANESCO and adjusting tariffs [92], and he immediately replaced the entire top brass of TANESCO, REA and the Ministry of Energy [93]. The new Chairman of TANESCO had been in charge of implementing Kikwete's 'Big Results Now' initiative, and the new Managing Director of the utility was brought in from the private sector. The new Electricity and Renewable Energy Commissioner was Felchesmi Mramba, the former Director of TANESCO who had been fired by Magufuli. Mramba was soon promoted to become the Permanent Secretary of the Ministry.

The new leadership signalled more openness towards FDI and private capital, which mirrored similar signals from the new President and government for the country's economy more broadly. They immediately revived the tendering process for solar and wind, which had been stranded since 2020. First, they got the bids processed in the Ministry of Finance, and then, at the beginning of 2022, the process was fast-tracked by a dedicated TANESCO team doing due diligence on the proposed projects. Accordingly, in March/April 2022 five foreign companies, three 50 MW solar and two 100 MW wind, could begin negotiations over power-purchasing agreements. With the revival of the tender, we can also observe the renewed engagement of more Western donors involved in coalitions behind different projects, with developers having connections to their respective countries. The USA, France, Japan, the UK and Norway were mentioned as each promoting their own projects (interview with private-sector representative, 14 March 2023). However, the negotiation of PPAs soon ran into trouble. Even though the bid prices received from the companies in the tendering process were reportedly very favourable, negotiations over PPAs with the bidders ground to a halt in the middle of 2022.

7.2. Ambivalence towards private non-hydro renewable energy amid continued resource-nationalist ideas and the return of factionalism

The stumbling block in the negotiation of PPAs for the proposed solar and wind projects between the government and the private developers was access to international arbitration, take-or-pay contracts and government guarantees. These were demanded by the bidders but not

accepted by the government. The disagreement was a sign that resource-nationalist ideas had not disappeared completely with Magufuli's death. Some private-sector and Western donor representatives suggested that a limited understanding on the Tanzanian side of how private companies in the sector operate was to blame (interview with donor representative, 6 May 2022; private-company representative, 20 October 2022). However, energy-sector technocrats stressed that international arbitration and government guarantees were matters for the government, and that the decision to cancel the tender had been taken by the Minister of Energy with the backing of both government and president (interview with government representative, 14 March 2023, and energy-sector expert 7 November 2023). Interviewees mentioned the political risks associated with providing government guarantees, which had been a toxic issue since a corruption-tainted agreement with IPTL in the 1990s (interview with private-company representatives 20 and 24 October 2022).

The continuation of resource-nationalist ideas could also be observed by August 2022, when it became clear that negotiations were unlikely to come to fruition. Accordingly, Makamba encouraged domestic private-sector actors to join forces in large-scale renewable-energy projects, instead of leaving them to foreign investors [94]. At around the same time, a number of PPP projects appeared with a short notice. Also in August, a Memorandum of Understanding (MOU) for the development of 2000 MW of renewable energy between TANESCO and Masdar, a United Arab Emirates (UAE) company, was announced [95,96]. The connection to Masdar had been established during a state visit to the UAE in February 2022 and had been pushed by the President and Minister of Energy (interview with former government representative, 9 March 2023). French Total Energies is also reported having engaged the government in plans for solar and wind under a PPP arrangement [97]. The return of PPPs was confirmed by Makamba at a conference in February 2023. The tenders were formally cancelled at the beginning of 2023.

Again, major changes affecting the promotion of non-hydro renewable energy can be observed without any major changes in energy policies but linked to shifting coalition dynamics. Some coalitions promoting private non-hydro renewable-energy projects have been sidelined, while others more aligned with the dominant ideas among ruling politicians about Tanzania's broader economic development have found favour in a reconfigured coalition, which now allows implementing large-scale non-hydro renewable energy. Western donors and investors have re-emerged, but hitherto those with a more flexible approach to the ownership of energy projects than the market-driven development promoted by the World Bank have seen more progress. The coalition with French AFD that became apparent with the 50 MW Kishapu solar project was later reinforced with an extension to the project of another 100 MW, as well as with an 87-MW Kakono hydropower project. Financing agreements for Kakono were signed at the beginning of 2023 for a project to be owned by TANESCO with funding from the AFD, AfDB and EU [98].

In September 2023, Makamba became Minister of Foreign Affairs and was replaced as Minister of Energy by Doto Biteko. The new Minister in turn changed the director and chairman of TANESCO [99]. These changes may have reflected a need for new faces after long-running power shortages due to drought, but, as outlined in the section on Tanzania's political settlement above, they are also likely to be due to the strengthening of the Magufuli faction in the ruling party that had mobilised over the unpopular outsourcing of parts of the Port of Dar es Salaam to a foreign company, the Emirati DP World. President Samia brought some of the former Magufuli allies, who had been critical of the deal, back in to stabilise the government. Among these was Biteko, who had first served as Minister of Minerals under Magufuli, and with the reshuffle he was not only made Minister of Energy but also Deputy Prime Minister. He immediately initiated a review of the agreements with international oil companies about the development of large-scale offshore gas deposits that had almost reached completion under his predecessor.

We are yet to see whether and how these developments will also affect the prospects for non-hydro renewable energy.

8. Discussion and conclusion: Implications of the Tanzanian case for analysis of the political economy of energy transitions in lower-income African countries

The politicized decision-making around energy projects that we can observe in mainland Tanzania amply demonstrates the importance of politics and power in energy transitions in lower-income African countries. For decades, Tanzania has had policies and targets for diversifying its energy mix away from hydro, but implementation has lagged behind when it comes to the development of non-hydro renewable energy. It is a main argument of this article that energy projects on a larger scale in lower-income countries are so politically important that the analysis of coalitions promoting policies and projects at the sector level must take into account how they are embedded in the broader distribution of power in the country. In Tanzania, we can observe the emergence of coalitions promoting private wind and solar projects, which were repeatedly overtaken by stronger coalitions around large-scale gas and hydropower projects. The latter were linked to ruling politicians' resource-nationalist ideas about fast-tracking social and economic development through state-led mega projects.

Only recently, with the advent of a new president and administration and a donor who is pragmatic about ownership, and a project in the pipeline that was ready when additional capacity was needed, did a large-scale, public utility-owned solar project move to implementation in Tanzania. The article's second argument is therefore that non-hydro renewable energy policies and projects are more likely to move to implementation when they fit with the priorities and dominant ideas about broader development held by a country's ruling political elite. There are a number of implications for the development of a framework for the study of the political economy of energy transitions in lower-income African countries. The first is that in such contexts the coalition approach can be developed by combining it with a political settlement framework that has been adapted to the analysis of the political economy of energy transitions. It is a contribution of this article that it demonstrates how this can be done.

Second, the article suggests that the implementation – or lack of implementation – of non-hydro renewable energy cannot be understood in isolation but requires analyses of the dynamics around the other major sources of energy in a country. An important factor that affects the relative strength of coalitions behind the different types of energy is a country's resource endowments, where, for instance, a pattern can be observed whereby the availability of gas in Tanzania negatively influenced the prospects of coalitions promoting non-hydro renewable energy on a larger scale. That a country like Kenya, which has no viable petroleum resources, became a frontrunner on the continent over the same period in deploying non-hydro renewable energy in its energy mix illustrates the point.

Third, and relatedly, donors and development finance play a significant role in policy-coalition dynamics in lower income countries, for instance, by supporting the introduction and promotion of new, non-hydro renewable energy. Their influence too, however, is relative to the influence of other actors and they must therefore be systematically included in analyses of both political settlement and sector level dynamics. In Tanzania, like in many other lower-income African, the advent of donors like China and the AfDB as more significant sources of finance, as well as of economic growth that allows governments to mobilise resources outside the 'old' Western donor coalitions, have given governments more room for manoeuvre.

Fourth, dominant domestic ideas about a country's social and economic development play a significant role in the political economy of energy transitions in lower-income African countries. In our case, a combination of resurgent statist resource-nationalist ideas about fast-tracking social and economic development and past corruption

scandals related to private power projects were not conducive to the non-hydro renewable energy projects that for long were promoted through IPPs. Again, context matters: other countries with political elites with more liberal ideas have fared differently, including when it comes to the promotion of non-hydro renewable energy by private developers. More cross-country comparative research into the ideational aspects of coalition dynamics is needed.

Fifth, such ideas are likely to overlap with ideas about how to ensure energy security in a country. Globally, the understanding of energy security has increasingly come to include electricity. The standard model reforms that have been promoted internationally over the last three decades have pursued a market-centric approach to energy-sector development in which energy security is to be pursued by ensuring supplies through the markets. However, Chester [36] identifies other dimensions of energy security that governments of more interventionist leanings may pursue, namely the (in)adequacy of infrastructural capacity, affordability and sustainability. Applying such a multi-dimensional lens makes it clear that decision-makers deal with several trade-offs, which are more challenging in lower-income countries.

The existence of trade-offs whose relative importance may change over time points to an inherent complexity in energy-sector development. This has not become any less pertinent, as the political salience of energy has increased in sub-Saharan African countries. Since the early to mid-2000s, we can observe the emergence of coalitions of governments and Western donors around improving access to modern energy for ever more people [100]. Over time, this has resulted in significant expansions in access, which in turn have meant that reliability and tariffs have become important parts of the social contracts between populations and political elites. In Tanzania's case, we can observe how key decision-makers facing recurrent power shortages due to drought initially placed a greater emphasis on the short-term development of infrastructure through the construction of a gas-to-electricity pipeline, and later on availability and price through a mega-hydro dam. Sustainability and decarbonisation were not major priorities.

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Rasmus Hundsbaek Pedersen: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization.
Japhace Poncian: Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization.

Declaration of competing interest

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Data availability

The authors do not have permission to share data.

References

- [1] C. Roberts, F.W. Geels, M. Lockwood, P. Newell, H. Schmitz, B. Turnheim, et al., The politics of accelerating low-carbon transitions: towards a new research agenda, *Energy Res. Soc. Sci.* 44 (2018) 304–311.
- [2] F. Kern, K.S. Rogge, Harnessing theories of the policy process for analysing the politics of sustainability transitions: a critical survey, *Environ. Innov. Soc. Trans.* 27 (2018) 102–117.
- [3] P. Newell, *Power Shift: The Global Political Economy of Energy Transitions*, Cambridge University Press, 2021.
- [4] D.J. Hess, Sustainability transitions: a political coalition perspective, *Res. Policy* 43 (2) (2014) 278–283.
- [5] J. Markard, M. Suter, K. Ingold, Socio-technical transitions and policy change—advocacy coalitions in Swiss energy policy, *Environ. Innov. Soc. Trans.* 18 (2016) 215–237.
- [6] M.B. Lindberg, L. Kammermann, Advocacy coalitions in the acceleration phase of the European energy transition, *Environ. Innov. Soc. Trans.* 40 (2021) 262–282.
- [7] J. Meckling, N. Goedeking, Coalition cascades: the politics of tipping points in clean energy transitions, *Policy Stud. J.* 51 (4) (2023) 715–739.
- [8] G. Bridge, S. Barr, S. Bouzarovski, M. Bradshaw, E. Brown, H. Bulkeley, et al., *Energy and Society: A Critical, Routledge, Perspective*, 2018.
- [9] U.E. Hansen, I. Nygaard, H. Romijn, A. Wiecek, L.M. Kamp, L. Klerkx, Sustainability transitions in developing countries: stocktaking, new contributions and a research agenda, *Environ. Sci. Pol.* 84 (2018) 198–203.
- [10] F. Müller, S. Claar, M. Neumann, C. Elsner, Is green a Pan-African colour? Mapping African renewable energy policies and transitions in 34 countries, *Energy Res. Soc. Sci.* 68 (2020) 101551.
- [11] P.A. Trotter, A. Brophy, Policy mixes for business model innovation: the case of off-grid energy for sustainable development in six sub-Saharan African countries, *Res. Policy* 51 (6) (2022) 104528.
- [12] A.H. Kazimierzczuk, Wind energy in Kenya: a status and policy framework review, *Renew. Sust. Energ. Rev.* 107 (2019) 434–445.
- [13] J. Köhler, F.W. Geels, F. Kern, J. Markard, E. Onsongo, A. Wiecek, et al., An agenda for sustainability transitions research: state of the art and future directions, *Environ. Innov. Soc. Trans.* 31 (2019) 1–32.
- [14] M.H. Khan, Political settlements and the analysis of institutions, *Afr. Aff.* 117 (2018) 636–655.
- [15] S. Hickey, G. Mohan, Reconceptualizing the politics of pockets of effectiveness, in: S. Hickey (Ed.), *Pockets of Effectiveness and the Politics of State-Building and Development in Africa*, Oxford University Press, 2023, pp. 30–60.
- [16] L. Baker, P. Newell, J. Phillips, The political economy of energy transitions: the case of South Africa, *New Political Economy*. 19 (6) (2014) 791–818.
- [17] K. Hochstetler, *Political Economies of Energy Transition: Wind and Solar Power in Brazil and South Africa*, Cambridge University Press, 2020.
- [18] A. Aly, M. Moner-Girona, S. Szabó, A.B. Pedersen, S.S. Jensen, Barriers to large-scale solar power in Tanzania, *Energy Sustain. Dev.* 48 (2019) 43–58.
- [19] J. Poncian, R.H. Pedersen, Resource nationalism and energy transitions in lower-income countries: the case of Tanzania, *Rev. Afr. Polit. Econ.* 50 (177-178) (2023) 355–373.
- [20] R.H. Pedersen, O.W. Andersen, A contested agenda: energy transitions in lower-income African countries, *Energy Policy* 175 (2023) 113496.
- [21] D. Beach, R.B. Pedersen, *Process-Tracing Methods*, University of Michigan, Foundations and Guidelines. USA, 2013.
- [22] R.H. Pedersen, J. Poncian, The political economy of energy transitions in Africa: politics and power in Tanzania, in: DHS Working Paper 01, 2023.
- [23] S. Hickey, *Thinking about the Politics of Inclusive Development: Towards a Relational Approach*, University of Manchester, UK, Effective States and Inclusive Development Research Centre, 2013.
- [24] P.A. Sabatier, C.M. Weible, The advocacy coalition framework: Innovations and clarifications, in: P.A. Sabatier (Ed.), *Theories of the Policy Process*, Westview Press, 2, 2007, pp. 189–220.
- [25] J.W. Thomas, M.S. Grindle, After the decision: implementing policy reforms in developing countries, *World Dev.* 18 (8) (1990) 1163–1181.
- [26] P. Behuria, L. Buur, H. Gray, Studying political settlements in Africa, *Afr. Aff.* 1-18 (2017).
- [27] M.H. Khan, *Political Settlements and the Governance of Growth-Enhancing Institutions*, Published on, https://eprints.soas.ac.uk/9968/1/Political_Settlements_internet.pdf. Accessed 8 August 20172010.
- [28] T. Lavers, S. Hickey, Alternative routes to the institutionalisation of social transfers in sub-Saharan Africa: political survival strategies and transnational policy coalitions, *World Dev.* 146 (2021) 105549.
- [29] P.L. Bhamidipati, U.E. Hansen, J. Haselip, Agency in transition: the role of transnational actors in the development of the off-grid solar PV regime in Uganda, *Environ. Innov. Soc. Trans.* 33 (2019) 30–44.
- [30] P. Newell, J. Phillips, Neoliberal energy transitions in the south: Kenyan experiences, *Geoforum* 74 (2016) 39–48.
- [31] M. Power, P. Newell, L. Baker, H. Bulkeley, J. Kirshner, A. Smith, The political economy of energy transitions in Mozambique and South Africa: the role of the rising powers, *Energy Res. Soc. Sci.* 17 (2016) 10–19.
- [32] T. Lavers, Taking ideas seriously within political settlements analysis, in: ESID Working Paper No 95, 2018.
- [33] T. Lavers, B. Dye, *Theorising the Political Economy of Dams: Towards a Research Agenda*, 2019.
- [34] M. Moore, *Natural Resources and Development: Which Histories Matter?* HISTORIANS DEVELOPMENT, HISTORY, 2020, p. 261.

- [35] Y. Mulugetta, Y. Sokona, P.A. Trotter, S. Fankhauser, J. Omukuti, L. Somavilla Croxatto, et al., Africa needs context-relevant evidence to shape its clean energy future, *Nat. Energy* 7 (11) (2022) 1015–1022.
- [36] L. Chester, Conceptualising energy security and making explicit its polysemic nature, *Energy Policy* 38 (2) (2010) 887–895.
- [37] F.W. Geels, Regime resistance against low-carbon transitions: introducing politics and power into the multi-level perspective, *Theory, Culture & Society*. 31 (5) (2014) 21–40.
- [38] L. Baker, J. Burton, *The Politics of Procurement and the Low-Carbon Transition in South Africa*, Edward Elgar Publishing, Handbook of the International Political Economy of Energy and Natural Resources, 2018.
- [39] M.B. Ting, R. Byrne, Eskom and the rise of renewables: regime-resistance, crisis and the strategy of incumbency in South Africa's electricity system, *Energy Res. Soc. Sci.* 60 (2020) 101333.
- [40] M.F. Lofchie, *The Political Economy of Tanzania. Decline and Recovery*, University of Pennsylvania Press, Pennsylvania, USA, 2014.
- [41] S.M. Rugumamu, *Lethal Aid. The Illusion of Socialism and Self-Reliance in Tanzania*, Africa World Press, Samara, Eritrea, 1997.
- [42] S.M. Wangwe (Ed.), *NEPAD at Country Level: Changing Aid Relationships in, Mkuki na Nyota Publishers Dar es Salaam, Tanzania*, 2002.
- [43] A.K. Bak, O. Therkildsen, Democratisation in Tanzania: no elections without tax exemptions, *J. East. Afr. Stud.* 1-21 (2022).
- [44] T. Jacob, R.H. Pedersen, New resource nationalism? Continuity and change in Tanzania's extractive industries, *Extr. Ind. Soc.* 5 (2) (2018) 287–292.
- [45] M. Tsubura, "Umoja ni ushindi (Unity is victory)": management of factionalism in the presidential nomination of Tanzania's dominant party in, *J. East. Afr. Stud.* 2017 (2015) 1–20.
- [46] R.H. Pedersen, T. Jacob, Political settlement and the politics of legitimization in countries undergoing democratisation: insights from Tanzania, in: *ESID Working Paper No. 124*, 2019.
- [47] M. Furukawa, Management of the international development aid system: the case of Tanzania, *Dev. Policy Rev.* 36 (2018). 0270-084.
- [48] Africa Confidential, The return of the hard men, *Afr. Confid.* (2024), 19 January 2024.
- [49] G. Foley, Renewable energy in third world development assistance learning from experience, *Energy Policy* 20 (4) (1992) 355–364.
- [50] United Republik of Tanzania (URT), *The Energy Policy of Tanzania*, 1992.
- [51] K. Gratwick, R. Ghanadan, A. Eberhard, *Generating Power and Controversy. Understanding Tanzania's Independent Power Projects. Updated to 2007, version 2*, 2007.
- [52] V. Foster, A. Rana, *Rethinking Power Sector Reform in the Developing World*, World Bank Publications, 2020.
- [53] R.H. Pedersen, P. Bofin, Muted market signals: politics, petroleum investments and regulatory developments in Tanzania, *J. East. Afr. Stud.* 13 (3) (2019) 409–427.
- [54] B. Cooksey, IPTL, Richmond and "Escrow": The Price of Private Power Procurement in Tanzania, 2017.
- [55] B. Cooksey, The Power and the vainglory: Anatomy of a Malaysian IPP in Tanzania, in: K.S. Jomo (Ed.), *Ugly Malaysians: South-South Investments Abused*, Institute for Black Research, Durban, South Africa, 2002.
- [56] H.S. Gray, The political economy of grand corruption in Tanzania, *Afr. Aff.* 114 (456) (2015) 382–403.
- [57] B. Mkapa, Legacy of Reform and Future of Development Partnerships. In: Sefue O, editor. *Governance, Policy and Institutional Reform and Platform for the Future The Mkapa Years, Collected Speeches 3*, 2002, pp. 521–531.
- [58] P. Bofin, R.H. Pedersen, T. Jacob, The politics of power and natural gas in Tanzania: how political settlement dynamics shapes deals in a 'new oil' country, in: *ESID Working Paper No. 149*, 2020.
- [59] A. Eberhard, K. Gratwick, L. Kariuki, A review of private investment in Tanzania's power generation sector, *Journal of Energy in Southern Africa*. 29 (2) (2018) 1–11.
- [60] URT, *Electricity Act, 2008*, Accessed 18 January 2023 on, <https://faolex.fao.org/docs/pdf/tan85322.pdf>, 2008.
- [61] URT, *Power system master plan 2009 Update*, 2009.
- [62] World Bank, *SINGIDA WIND POWER PROJECT: PROJECT INFORMATION DOCUMENT (PID) Report No: AB6633*, Accessed 4 April 2023 on, <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/349061468119366607/tanzania-singida-wind-power-project2011>.
- [63] IFC, *Tanzania Welcomes First Wind Farm*, Published October 2015 on, https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/tanzania-welcomes-first-wind-farm. Accessed 2 May 20222015.
- [64] UK and URT, *HLPP Event Joint Statement for issue on 8th July 2014*, Accessed 4 April 2023 on, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/328577/Joint_Statement.doc, 2014.
- [65] R.H. Pedersen, T. Jacob, P. Bofin, From moderate to radical resource nationalism in the boom era: pockets of effectiveness under stress in 'new oil' Tanzania, *Extr. Ind. Soc.* 7 (4) (2020) 1211–1218.
- [66] URT, *FINAL REPORT ON JOINT ENERGY SECTOR REVIEW FOR (2010/11) 2011*.
- [67] URT, *The National Natural gas Policy of Tanzania*, URT, United Republic of Tanzania, 2013.
- [68] F. Mramba, *TANESCO OVERVIEW. A Presentation By TANESCO Managing Director, Eng. Felchesmi Mramba*, 14 August, Accessed 25 November 2022 on, <https://usea.org/sites/default/files/event-/TANESCO%20Overview.pdf;2015, 2015>.
- [69] JICA and TANESCO, *DATA COLLECTION SURVEY ON GAS THERMAL POWER GENERATION IN UNITED REPUBLIC OF TANZANIA. FINAL REPORT*, 2016.
- [70] Ministry of Energy and Minerals, *Electricity Supply Industry Reform Strategy and Roadmap 2014–2025*, 2014.
- [71] T. Jacob, Briefing: competing energy narratives in Tanzania: towards the political economy of coal, *Afr. Aff.* 116 (463) (2017) 341–353.
- [72] URT, *THE ELECTRICITY (MARKET RE-ORGANIZATION AND PROMOTION OF COMPETITION) REGULATIONS*, 2016. GOVERNMENT NOTICE NO. 292 published on 21/10/2016, Accessed 2 December 2022 at, <https://www.ewura.go.tz/wp-content/uploads/2019/04/THE-ELECTRICITY-MARKET-RE-ORGANIZATION-AND-PROMOTION-REGULATIONS-2016-1.pdf>2016.
- [73] World Bank, *Implementation completion and results report on a series of two credits in the total of SDR 130.1 million to the United Republic of Tanzania for the first and second power and gas sector DPO*. December 21, 2017, 2017.
- [74] URT, *POWER SYSTEM MASTER PLAN*, 2016. UPDATE 2016.
- [75] W. Kruger, A. Eberhard, Renewable energy auctions in sub-Saharan Africa: comparing the south African, Ugandan, and Zambian programs, *Wiley Interdisciplinary Reviews: Energy and Environment*. 7 (4) (2018) e295.
- [76] J. Gregory, B.K. Sovacool, Rethinking the governance of energy poverty in sub-Saharan Africa: reviewing three academic perspectives on electricity infrastructure investment, *Renew. Sust. Energ. Rev.* 111 (2019) 344–354.
- [77] *The Guardian*, TANESCO boss shown the door as tariffs saga heats up, *Guardian* (2017), 2 January 2017.
- [78] *The Citizen*, Why Magufuli's power dream may elude him, *The Citizen*. 17 March 2016 (2016) updated 18 April 2021. Accessed 9 April 2024 on, <https://www.the-citizen.co.tz/tanzania/news/national/why-magufuli-s-power-dream-may-elude-him-2550506>.
- [79] B.J. Dye, Unpacking authoritarian governance in electricity policy: understanding progress, inconsistency and stagnation in Tanzania, *Energy Res. Soc. Sci.* 80 (2021) 102209.
- [80] *The Guardian*, Govt seeks loan from AfDB to build Stiegler's gorge hydropower dam, *The Guardian*. 29 April 2018 (2018).
- [81] T. Zajontz, Win-win' contested: negotiating the privatisation of Africa's freedom railway with the 'Chinese of today', *J. Mod. Afr. Stud.* 60 (1) (2022) 111–134.
- [82] *Daily News*, Gear shifts to higher level as house gets 32.5trn/- plan sketch, *Daily News*. 8 November 2017 (2017).
- [83] Africa Confidential, Magufuli wants a mega-dam, *Afr. Confid.* 7 (July) (2020) 2020.
- [84] B. Taylor, Government defends Stiegler's Gorge Dam Project, *Tanzan. Aff.* (2018), 1 September 2018.
- [85] TANESCO, TENDER No. PA/001/2018–19/HQ/N/032 FOR QUALIFICATION OF LAGRE SOLAR POWER GENERATING PROJECTS. Invitation for Qualification (IFQ), Accessed 28 October 2022 on, <https://energies-media.com/wp-content/uploads/2018/10/TanESCO Appel-qual. Solaire sep-oct-18.pdf>2018.
- [86] TANESCO, QUALIFICATION OF LARGE WIND POWER GENERATING PROJECTS. TENDER NO. PA/001/2018-19/HQ/N/034 18 September 2018, 2018. Accessed 28 October 2022 on, <https://www.velmalaw.co.tz/wp-content/uploads/2018/09/TANESCO-IFQ-Large-Wind-dated-18-September-2018.pdf>.
- [87] AEP, Tanzania: Stiegler's Gorge, two other projects to gobble up Sh1.9 trillion in 2019/20 budget, Published 29 May 2019. Accessed 13 April 2023 on, <https://africa-energy-portal.org/news/tanzania-stiegler-s-gorge-two-other-projects-gobble-sh-19-trillion-201920-budget>, 2019.
- [88] AfDB, Tanzania: African Development Bank approves \$120 million loan to build Malagarasi Hydropower Project [press release], Published 26 November 2020 on, <https://www.afdb.org/en/news-and-events/press-releases/tanzania-african-development-bank-approves-120-million-loan-build-malagarasi-hydropower-project-39529>. Accessed 3 December 20202020.
- [89] *The Guardian*, AfDB's \$140m to fund Kigoma power project, *The Guardian*. (2021), 27 May 2021.
- [90] AFD, AFD to finance the first grid connected Solar Photovoltaic Power Plant in Tanzania and the modernization of electricity network, Published 4 August 2021 on, <https://tz.ambafrance.org/AFD-to-finance-the-first-grid-connected-Solar-Photovoltaic-Power-Plant-in>. Accessed 20 April 20222021.
- [91] *The East African*, Dar Es Salaam hit by power, water rationing as rivers dry up, *The East African*. 19 November 2021 (2021).
- [92] Africa Confidential, Makamba plans power reforms, aiming for the presidency, *Afr. Confid.* 2 November 2021 (2021).
- [93] *The Citizen*, Why Tanesco overhaul was bound to happen, *The Citizen*. 26 September 2021 (2021).
- [94] *The Guardian*, Makamba pushes private sector to invest in large energy projects, *The Guardian*. 22 August 2022 (2022).
- [95] *The Citizen*, Tanesco in joint venture with UAE's Masdar, *The Citizen*. 16 August 2022 (2022).
- [96] Tanesco, List of potential projects for investment under the Ministry of Energy. Published 2022 - reference to COP27 in Egypt in 2022 in upper right corner, Accessed 31 January 2023 on, http://www.tanESCO.co.tz/attachments/project_s/government_funded/jR0PNnkUpYmuA0Nqr9fj9D0C5yVRsM_2022_11_30_07_52_31.pdf, 2022.
- [97] *The Citizen*, Total unveils clean energy plan in Tanzania, *The Citizen*. 26 November 2021 (2021).
- [98] AfDB, African development Bank, European Union, and France invest \$300 million in Tanzania's hydropower project. Published 14 April 2023, Accessed 17 April 2023 on, <https://www.afdb.org/en/news-and-events/press-releases/african>

- development-bank-european-union-and-france-invest-300-million-tanzanias-hydro-power-project-604232023.
- [99] The Citizen, Tanesco's revolving door: Chande out, Hanga in, The Citizen. 23 September 2023 (2023). Accessed 25 September 2023 on, <https://www.thecitizen.co.tz/tanzania/news/national/tanESCO-s-revolving-door-chande-out-hanga-in-4378092>.
- [100] R.H. Pedersen, O.W. Andersen, H. Nøhr, Trends in development assistance to new renewable energy in sub-Saharan Africa, in: DIIS Working Paper No 12, 2020.