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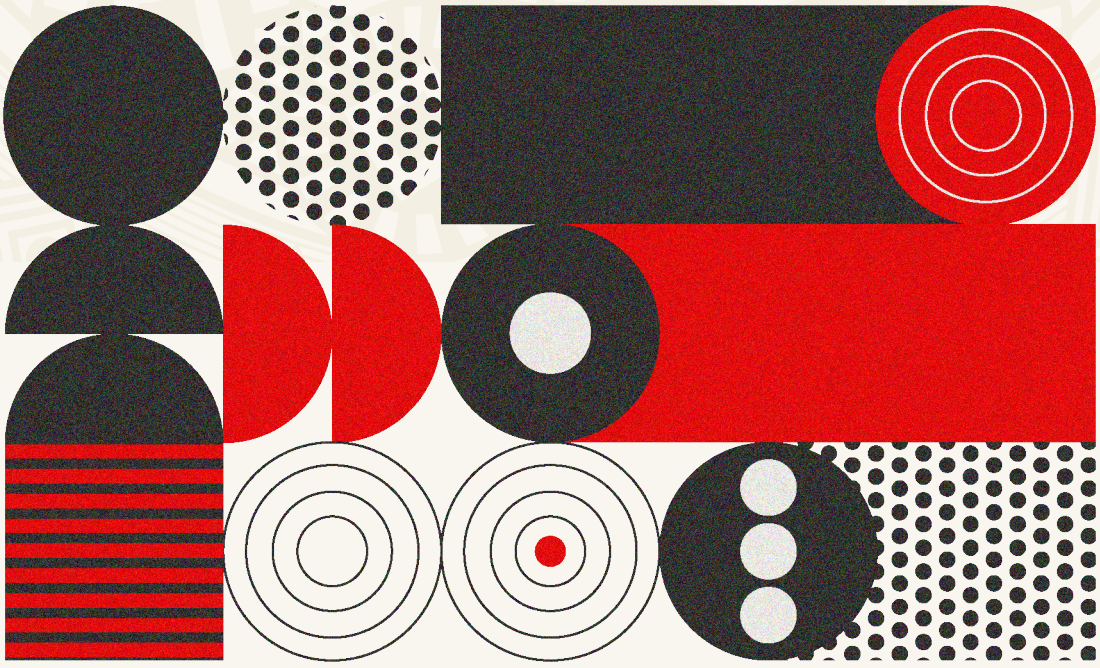
CLIMATE FINANCE AND GHANA'S ENERGY POLICY

From Derisking to a Green Developmental State



REDCAJU
Reviving Developmentalism for Climate and Social Justice

REDCAJU
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Executive Summary

Ghana, like many other African countries, is currently facing the consequences of a global climate crisis. Rising temperatures are producing unprecedented heat levels not only in the north but also in the historically cooler southern region and middle belt of Ghana. Rising sea levels are eroding coastal land in the Volta Region and unpredictable rain patterns have inhibited farming, particularly in the Northern, Upper East and Upper West Regions. Commendably, governments over the years have demonstrated commitment to the national, continental and global calls for action to halt and possibly reverse the climate catastrophe. As party to the United Nations Framework Convention on Climate Change (UNFCCC), Ghana's 2021 national energy policy reaffirmed its commitment to help limit global warming to 1.5°C by 2050.

In light of these commitments for climate action, the Ghanaian government and multilateral development institutions have maintained that the overriding challenge to fighting climate change is financing. As the Ghanaian state cannot afford to finance all its energy needs, it has often been argued that government needs to create a conducive investment environment that can crowd-in private capital flows, mainly from foreign sources, to support the rollout of its energy policies.

This report demonstrates that such an arrangement reflects what has been conceptualised in critical macrofinance as a derisking agenda. This derisking logic, rather than supporting transformative climate action, is intended to turn public infrastructure and services into profitable ventures for institutional investors. Practically, this derisking logic to climate action has been pursued under the guise of Public Private Partnerships (PPPs). Specifically for the energy sector in Ghana, PPPs in the energy sector are often referred to as Power Purchase Agreements (PPAs). The report reviews Ghana's energy policy documents and actions, and shows that there is a pervasive pattern of adopting derisked PPAs for energy infrastructure projects. Overall, Ghana has more than ten derisked PPAs that collectively generate over 2000MW of electric power annually.

This report draws its data on PPAs primarily from the Reviving Developmentalism for Climate and Social Justice (REDCAJU) project. As opposed to the dominant neoliberal policy paradigm, the REDCAJU project aims to promote research and advocacy that support progressive macrofinancial perspectives for a 21st Century Green Developmental States in Africa. The REDCAJU project will particularly map and compare derisking strategies in countries such as Ghana, Senegal, Nigeria, and South Africa. The case of Ghana analyses derisking in the energy sector PPAs. Between 2007 and 2016, the Government of Ghana, through the Electricity Company of Ghana (ECG), entered into several PPAs with Independent Power Producers (IPPs) to enhance national electricity supply.. All of those PPAs were take-or-pay contracts ranging between 20 to 25 years in duration, with derisked financial investments from China, the USA, Europe and South Africa.

A prime example of derisking in the context of Ghana's energy policy is the Sankofa Gas Project. In this project, a World Bank-mediated investment and payment structure obliges a Ghanaian state-owned enterprise, Ghana National Petroleum Corporation (GNPC) to effectively absorb all the risks associated with the extraction of Non-Associated Gas off Ghana's western coast, while investors such Italy's Eni and the Netherlands' Vitol enjoy guaranteed returns. Besides Sankofa, there is a broad and well established practice of derisked PPAs that allows an increasing number of institutional investors from across the world to profit from Ghana's struggle for energy sufficiency.

Another example of this phenomenon is the Amandi Power (Twin City) project which is primarily owned by US-based Denham Capital and designed to supply 200MW of thermal power to ECG over a contract period of 25 years. Denham Capital, the majority owner, is a private equity fund which has supported USAID's Power Africa initiative. It holds its equity through its subsidiary Endeavor Energy Partners. Another stakeholder, Anergi (formerly Aldwych) has received investments from the Netherlands' FMO and the Shell Foundation, while South Africa-based Old Mutual maintains equity through African Infrastructure Investment Managers (AIIM). USAID helped broker the project, whose total project cost was USD 556M, according to AIIM, with USD 418M in debt funding and USD 138M in equity financing. Amandi's other debt providers include two development finance institutions, British International Investments (BII) and the United States International Development Finance Corporation (DFC). The take-or-pay contract including in this supply deal imposes additional costs on ECG for unused power and related risks. In November 2024 for instance, Amandi joined several other IPPs in threatening to shut down operations at its plant due to unpaid debts receivable (3news, 2024).

Similarly, other PPAs such as the Karpower Project and AKSA Energy have multiple institutional investors who profit from their derisked investments while shifting cost burdens to Ghanaian power consumers. These cases of PPAs demonstrate how a derisking approach in the Ghanaian energy sector is largely supporting the interests of institutional investors motivated by profit as opposed to the aim of supporting a just and equitable transition to sustainable energy sources. This report contends, for policy action, that a green developmental state is essential to producing a climate secure and prosperous Ghana.

Introduction

Amidst an economic and financial crisis, Ghana swore in a new president on 7 January 2025. In his inaugural speech, President John Dramani Mahama promised urgent action, not only to resuscitate the financially broken economy, but also to address the perverse results of climate change. Subsequently, in his first State of the Nation address, delivered on 27 February 2025, the President declared before Parliament:

> Mr. Speaker, climate change remains a pressing concern for Ghana and the global community. To meet our climate mitigation targets, Ghana has allocated 24 million metric tonnes of its carbon budget – totalling 64 million metric tonnes – for authorisation under Article 6 of the Paris Agreement...we are committed to strengthening institutional and human capacity through necessary adaptation and mitigation measures to bolster resilience in critical sectors such as agriculture, forestry, energy, and water resources. We also pledge to align our national policies with international efforts to limit global warming to 1.5°C by 2050 and promote a fair and just transition to renewable energy sources[1].

President Mahama's observations are accurate and the new government's plans are highly commendable. It is undeniable that the devastating effects[2] of climate change are being felt in Ghana and that the situation could worsen unless deliberate policies are implemented for both mitigation and adaptation. While the appropriateness of the President's declarations and plans remain unquestionable, the same cannot be said about the prevailing national strategy to address climate change and energy transition unless, as this report advocates, President Mahama's government takes a new approach.

In response to the Paris Agreement for 2020-2030 and the African Union's Agenda 2063, Ghana updated its Nationally Determined Contributions (NDCs) in 2021. This resulted in the development of 19 climate policy actions which were translated into 13 adaptation and 34 mitigation programmes of actions. These 47 NDCs range from mitigation measures that are aimed at low-carbon electricity generation and clean rural household lighting, to adaption measures such as integrated water resources management and early warning and disaster risk management[3]. Notwithstanding the government's commitment to contributing to the fight against climate change, it is evident that the main constraint in achieving these NDCs, like most other developing and emerging countries, is finance. According to the Environmental Protection Agency (EPA) and the Ministry of Environment, Science, Technology and Innovation (MESTI), Ghana requires between US$ 9.3B and US$ 15.5B of investment to implement the 47 measures from 2020 to 2030. This project financing is expected to support adaptation and mitigation policy actions in several areas including energy efficiency, resilient urban infrastructure, and the management of climate-induced and gender-related health risks (EPA, 2021). Several measures have been adopted over the last eight years of the Akufo-Addo government to mobilise the finances. First, a national energy policy was developed in 2021 (Ministry of Energy, 2021). In September 2023, former President Akufo-Addo launched an energy transition and investment plan at the UN General Assembly, outlining Ghana's plans and investments needs in order to achieve net zero by 2060 (Ministry of Environment, Science, Technology and Innovation, 2023). In October 2024, a Climate

[1] Message on the State of the Nation delivered by HE John Dramani Mahama, President of the Republic of Ghana to the 9th Parliament on Thursday, February 27, 2025

[2] Myjoyonline 2025 Coastal Erosion in Volta Region: James Gunu declares 'state of emergency' https://www.myjoyonline.com/coastal-erosion-in-volta-region-james-gunu-declares-state-of-emergency/

[3] Ghana: Updated Nationally Determined Contributions Under the Paris Agreement (2020-2023) https://mesti.gov.gh/wp-content/uploads/2021/12/Ghanas-Updated-Nationally-Determined-Contribution-to-the-UNFCCC_2021.pdf

Finance Division was established by the Ministry of Finance to "coordinate and co-lead climate finance initiatives to attract international funds, partner investors and implement projects that promote green growth" (Ministry of Finance, 2024a). And lastly, in November 2024, government unveiled a Climate Prosperity Plan at the COP29 (Ministry of Finance, 2024b) showing projects relating to renewable energy systems, resilient health and water access, urban greening, among others.

This report will demonstrate that the prevailing approach to climate finance and clean energy provision, as set out in several of Ghana's national policy documents listed above, have not yielded substantial and sustainable results. This is evidence by the fact that the Ghanaian energy sector is heavily indebted. As early as 2016, Ghana's energy debt was about US$2.5 billion. In an attempt to address the sector's debt, government at the time enacted the Energy Sector Levies Act (ESLA) of 2015 (Parliament of Ghana, 2015). The ESLA was intended to generate revenues from a set of taxes for the repayment of energy sector debts. It was subsequently amended in 2017 and a Special Purpose Vehicle, ESLA PLC, was incorporated as a public limited liability company to issue long-term bonds to resolve energy sector debts (ESLA PLC, 2025). After more than 10 years of the ESLA, Ghana's energy sector debt remains unresolved and as Ghana's Energy Minister recent indicated, the sector's legacy debt have actually increased to about US$3B (Business and Financial Times, 2025). Therefore, this report attempts to show how Ghana's current approach to achieving energy security while addressing climate change is producing an overly indebted energy sector. The current model is that of government soliciting and de-risking private investments and finance as the solution to energy and climate problems. This market-based and inequitable approach to climate financing has proven incapable of delivering substantial, sustainable, and just climate-friendly outcomes (see Gabor and Braun, 2025; Newell, 2024; Gabor and Sylla, 2023).

As Gabor and Sylla (2023) observed, there is renewed interest in the role of the state in promoting green growth. However, this call for the 'return of the state' (Venizzon, 2024), as Gabor and Sylla rightly convey with the case of Namibia, is not for state control of the development process as per the Mkandwirian definition of the developmental state (see Mkandawire, 2001). Rather, the state is simply invited to derisk global private investments in the so-called green infrastructure projects in developing economies. This approach to climate policy is consistent with the Wall Street Consensus (Gabor, 2021) whose focus is to fashion the developmental state into a de-risking state. This derisking within the energy sector typically "frames climate policy as a question of 'mobilising' private capital – of crowding in rather than substituting the market" (Gabor and Braun, 2025:7). Effectively, the state's power to control, direct and discipline capital in furtherance of national industrialisation is supplanted by powerful institutional investors whose profiteering interests are guaranteed in the attempt to transition to green energy. For instance, in Ghana's attempts at energy security, it has relied heavily on Power Purchase Agreements (PPAs) with Independent Power Producers (IPPs). Since 2007, Ghana has entered into over 10 PPAs, under which IPPs have supplied over 2000MW of electric power. These contracts, far from addressing the nation's energy issues, have primarily been derisked by the state, allowing foreign private investors to profit at the expense of domestic national development.

Given this context of climate finance shortfalls and a problematic climate financing agenda, it is important to clearly outline the de-risking strategies deployed in the climate financing and green transition agenda in Ghana. This study intends to do exactly that, as well as offer an alternative comprehensive, just and transformative macrofinance framework that supports Ghana's green industrial policy. Its central argument of the problematic climate financing strategy is anchored on analysis of energy projects and Power Purchase Agreements (PPAs) involving mostly foreign institutional investors whose investments are guaranteed under derisking arrangements that

disproportionately burdens the government of Ghana. The Reviving Developmentalism for Climate and Social Justice (REDCAJU[4]) project, under which this report is written, offers extensive data and insights on Ghana's PPAs which are extensively analysed in Section 3 of this report. Prominent PPAs include the Sankofa Gas project, Amandi Power (Twin City) project, Karpower Project among others. The REDCAJU comprehensively captures data on the investors in these projects and the derisking strategies that facilitate their profiteering at the expense of Ghana.

While the Sankofa PPA is the single largest example of state de-risking of foreign private capital, it is hardly the beginning or end of de-risking often presented as public private partnership (PPP)[5] in Ghana's energy policy. The Amandi Power (Twin City) project, primarily owned by Denham Capital which is supposed to supply 200MW of thermal power to ECG over a contract period of 25 years exemplifies the variety of American and European institutional investors in the Ghanaian energy sector and also the elaborate derisking strategies that facilitate their profiteering and accumulation efforts. Moreover, the case of Amandi provides an opportunity to understand the geopolitical dimension of derisking of investments in Ghanaian energy sector, especially in relation to two other PPAs involving Chinese solar plants that provide power to ECG. Overall, as will be shown in the next sections, derisking strategies have permeated Ghana's energy policy and made it incapable of delivering an equitable and just green transition in Ghana.

The rest of the report includes the following: Section Two traces the history of derisking in Ghana, indicating a shift from post-independence developmentalism to a reliance on public private partnerships. Section Three analyses Ghana's energy policy. This section shows the links between the energy policy and national industrialization agenda, the institutional and financial setting under which the energy policy is pursued, the growing important of derisking in energy project implementation and the fiscal costs of derisking energy projects. The final section concludes and offers policy recommendations for green developmental state.

[4] REDCAJU project aims to promote research and advocacy that support progressive macrofinancial perspectives for a 21st Century Green Developmental States in Africa. The REDCAJU project will particularly map and compare derisking strategies in countries such as Ghana, Senegal, Nigeria, and South Africa. The case of Ghana analyses derisking in the energy sector PPAs. Between 2007 and 2016, the government of Ghana through the Electricity Company of Ghana (ECG) entered into several PPAs with Independent Power Producers (IPPs) for the supply of electricity. All of those PPAs were take or pay contracts ranging between 20 to 25 years, with derisked financial investments from China, the US, Europe and South Africa

[5] According to the Ministry of Finance, a PPP is a contractual arrangement between a public entity and a private sector party, with clear agreement on shared objectives for the provision of public infrastructure and services traditionally provided by the public sector (Ministry of Planning, 2011).

1. Historical Trajectory of Derisking in Ghana: From Developmentalism to the Derisking State

Since Ghana gained political independence in 1957, the country's developmental path has involved a variety of growth strategies. In the 1960s and 1970s, developmental state agendas were pursued by Kwame Nkrumah (see Akolgo, 2023) and Acheampong governments, which to a large extent, achieved their import substitution industrialisation. These were, as Mkandawire (1999) conceptualised, developmental states that had a developmentalist ideology and actively worked to build structures with the capacity and political autonomy to execute those ideologies. Kwame Nkrumah, for instance, funded infrastructure such as the Akosombo Hydroelectric Dam which provided the basis for import substitution industries across the country. Kutu Acheampong's government similarly built agricultural infrastructure, notably the Tono Irrigation Dam in Northern Ghana to support farmers whose activities served his development agenda of food self-sufficiency. Throughout this developmentalist period, governments actively drove the development agenda by directly investing in the economy and running state-owned industries and/or disciplining domestic capital in line with the national agenda as Nkrumah did (see Mensah, 2023). Even in the case of less developmentalist governments that succeeded Nkrumah and Acheampong, there were at least attempts, as Wade (1990) suggests, to 'govern the market', especially in the context of the liberalisation trends of the 1980s and 1990s.

In contrast, however, the state-capital relations took a different form at the turn of the century and particularly after the Heavily Indebted Poor Countries (HIPC) debt relief programme in 2004. Government was no longer just about deregulating and liberalising, as post-Washington Consensus neoliberalism recommended. The business of development in Ghana began to be pursued under the model of Public-Private Partnerships (Alidu, 2018; Osei-Kyei, Chan and Dansoh, 2018). Though PPPs began to emerge in Ghana in the 1990s, Alidu (2018) notes that President Kufuor's election in 2000 marked a significant shift as his government established a Ministry for Private Sector Development and subsequently in 2004, developed policy guidelines for public-private partnerships.

1.1 The 2020 PPP Act – The latest Legal Framework for PPPs in Ghana

When President John Evans Ata Mills assumed office in 2009, former president Kufour's Ministry of Private Sector Development was dissolved. However, the Mills administration issued a National Policy on Public Private Partnerships (Ministry of Finance, 2011) and subsequently, under the leadership of John Dramani Mahama, the government submitted a Public-Private Partnership Bill to Parliament in 2016. The PPP Act (2020) codified institutional and legal arrangements as well as the central role PPPs would play in Ghanaian economic growth strategies. Both the provisions of the Act and the PPPs that have been agreed since its enactment, leave no room for doubt that the Ghanaian government has, like most developing countries' governments concluded that its developmental agenda will only succeed if it de-risks the investment environment so as to crowd in private capital. The objectives of the Act as set out in Section 1:1 are to:

a. regulate public-private partnership arrangements; and

b. promote the use of private sector resources for the provision of infrastructure and services through public-private partnerships.

In order to deliver these two broad goals, Section 1:2 of the Act stipulates that the specific object of the Act shall include the:

a. creation of an environment and framework to enable private parties to participate in partnership projects and offer value for money to the public sector and users of the partnership projects;

b. leverage of public assets to encourage private sector investment in the provision of infrastructure and services;

c. protection of the interests of public and private sector stakeholders and end users;

d. establishment of a framework for optimal risk sharing in partnership projects;

It is clear from the provisions of the Act that government had set a growth strategy built not only on the reliance on PPPs for providing infrastructure and services, but also the de-risking of the investment environment for private sector investors. Where necessary as, set out Subsections 2(b) and 2(d), the state is enjoined to draw on national public resources to induce private investment as well as protect the interest of private investors. The Act also provided (in Section 84) for the Minister of Finance to prepare and present to Parliament, annual reports on all public private partnerships government has entered into in the previous year and those it plans to undertake in the year of reporting. In compliance with this Act, the first PPP report for 2021 was submitted to Parliament on 31 March 2022. The summaries of PPPs in the investment phase and reported by the Ministry of Finance for the years 2021, 2022, and 2023 are shown in Tables 2, 3, and 4. See Table 2 for a summary of PPPs and the elements of the government's derisking.

Table 2: Public-Private Partnerships - 2021

Project	Contracting Authority	Private Partner	Estimated Cost	Concession/ Completion Period
Takoradi Ship Repair Facility Project	Ghana Ports and Harbours Authority	Prime Meridian Docks Ltd	US$100M	25years
Boankra Integrated Logistics Terminal Project	Ghana Shippers' Authority	Ashanti Ports Services Limited	US$126M	30 Years
Takoradi Integrated Container and Multi-Purpose Terminal	Ghana Ports and Harbours Authority	Atlantic Terminal Services (ATS)	US$210M	25 Years
Tema Liquified Natural Gas Terminal	Ghana Ports and Harbours Authority	Tema LNG Terminal Ltd	US$350M	25 Years
Takoradi Liquid Bulk Terminal	Ghana Ports and Harbours Authority	Marshall Oil and Gas Service	US$65M	25 Years
Takoradi Inland Container Depot (ICD)	Ghana Ports and Harbours Authority	Ibistek Limited	US$70 M	25 Years
Takoradi Off-Dock Car Terminal	Ghana Ports and Harbours Authority	Safebond Company Limited	-	10 Years
Tema Terminal 3 Project	Ghana Ports and Harbours Authority	Meridian Ports Services (MPS)	US$1.5B	35 Years
Fruit And Export Terminal	Ghana Ports and Harbours Authority	Fruit and Export Terminal Ltd.	US$10M	20 Years
Tema Off-Dock Car Terminal	Ghana Ports and Harbours Authority	Safebond Car Terminal Limited	-	25 Years
Teshie Nungua Desalination Project	Ghana Water Company Limited (GWCL)	Messrs Befesa Desalination Development Ghana Ltd	US$125M	25 Years
NIA Foreigner Identification Management System Project	National Identification Authority	Identity Management System (IMS)	US$24.7M	15 Years
National Identification System Project	National Identification Authority	Identity Management Systems II (IMS II)	US$169.6M	15 Year

Source: Ministry of Finance, 2022

In 2021, about 13 public infrastructure and administrative projects (worth about US$2.8B) were reported by the Ministry of Finance to have been carried out by several state agencies under public-private partnership arrangements with durations spanning 15 and 35 years. Foreign private investors are involved in executing several of these projects. The US$350M Tema LNG Terminal and US$1.5B Tema Terminal 3 projects have institutional investors such as the London-based Helios Investment Partners, a private equity investment firm and Hague-based APM Terminals (a port terminal operating company), respectively. By 2022, PPPs that had entered the investment stage increased from 13 to 15 and subsequently to 18 in 2023, captured in the 2022 and 2023 PPPs reports (see Ministry of Finance, 2023, 2024).

Since the enactment of the PPP Act in 2020, there has been increased and persistent recourse to private sector investment into public infrastructure and services. The underlying thinking in this recourse to PPPs in Ghana is the repeated claim of government inefficiency, public sector budget constraints, and the need to reduce risk through PPPs. This model of providing public infrastructure based on the state's de-risking of private sector investments, is the same logic that has now been adopted in Ghana's struggle for clean energy and its climate financing agenda. The next section discusses Ghana's energy policy, its institutional setting and the fiscal implications of its de-risking strategy.

1.2 Sunon Asogli Power Project I – The emergence of PPPs in the energy sector.

While legislation governing the broader arrangement and operations of PPPs appeared more recently since 2011, legally binding PPPs have existed in the Ghanaian energy sector prior to the current regulations on PPPs. In particular, Power Purchase Agreements (PPAs) emerged as early as 2007. Since political independence in 1957, the ECG has relied on state-run electricity production, particularly the Volta River Authority (VRA). However, in 2007, a PPA between ECG and the Sunon Asogli Power Project I marked the emergence of IPPs in the Ghanaian energy sector. The Sunon Asogli Power Project I, the first power plant to be privately held in Ghana, was a PPA reached in 2007 for the supply of 200MW of thermal electric power to ECG for 25 years. Sunon Asogli not only marked the beginning of private sector participation in the energy sector; more importantly, it marked the beginning of state-led derisking of private investments into the provision of public infrastructure and services. This trend has generally permitted foreign, mostly Euro-American (and to a lesser extent Chinese) institutional investors to profit from domestic efforts at public infrastructure provision, and in this instance, clean sustainable energy.

The Sunon Asogli project is owned primarily by Shenzhen Energy (China; 60%), an entity of strategic importance to the Municipality of Shenzhen in China. The China-Africa Development Fund (China; 40%), Sunon Asogli's secondary equity holder, is a private equity pool funded by the China Development Bank with the aim of supporting Chinese ventures in Africa. Additionally, Guangdong Power Engineering, the contractor in charge of Sunon Asogli's engineering, procurement and construction, is a Chinese state-owned enterprise. Gas to the power plant is supplied by the West Africa Gas Pipeline and paid for by the government of Ghana. Since the PPA is a US Dollar-denominated contract, ECG often suffered forex losses from the depreciation of the Ghana cedi. Moreover, take-or-pay contracts impose costs on ECG for unused power. In 2024, the plant was shut down due to ECG's accrual of USD 259M in net receivable debt (see Segbefia, 2024). Since the Sunon Asogli PPA, a host of other similar projects have followed including the Amandi Power Project, Karpower Project, AKSA Energy, and Cenpower Kpone.

2. Ghana's energy policy: de-risking fossil fuels and renewables

2.1 Ghana's energy policy and its connection to national industrial policy

Ghana's energy policy is set out in its revised energy policy document (Ministry of Energy, 2021). To meet its vision of a national energy sector that is self-sufficient in the provision of sustainable energy for Ghanaian consumption and for export, the focus of the energy policy is summarised in two ways. The first is the policy's establishment of an overall mission for the energy sector, namely to "make competitively priced energy universally accessible and readily available in an environmentally sustainable manner for the local market and export" (Ministry of Energy, 2021:13). The second aspect of the national energy policy is laid out in the sub-sector policy goals, objectives and policy directions. These subsectors include the power subsector, the renewable energy subsector, the nuclear energy subsector, and the petroleum subsector. These subsectors, as detailed in the energy sector policy document (see Ministry of Energy, 2021), have corresponding goals, key issues and specific policy directions.

The Power sub-sector prioritises efficient electricity generation, transmission, financing, and tariff setting. Its main goal is the achievement of cost-competitive and sustainable generation of electricity. It is however confronted with issues such as the high cost of thermal electricity generation, excess generation capacity and low patronage at certain times, and the potential impact of climate variability on hydroelectricity generation. For these, the policy directions to be pursued included, among others, the implementation of electricity supply plan that utilises competitive bidding for all future procurement of electricity supply, the development of a standard power purchasing agreement template to be used across the industry, exploration of new export markets and the development of competitive electricity pricing. The renewable energy subsector aims to increase the contribution of renewable energy to the overall energy mix of the country drawing on hydropower, solar energy, wind energy, tidal wave and bioenergy. The sub-sector faces challenges regarding access to land for renewable energy systems, potential erosion of agricultural lands through the installation of renewable energy infrastructure, inadequate local content and participation, and insufficient regulatory framework for governing private sector participation in the renewal energy industry.

Nuclear energy sub-sector policy focuses on developing a resilient energy infrastructure that includes nuclear power generation into the national energy mix. The main issues surrounding nuclear energy include the limited industrial capacity for its development, funding and financing mechanism, and public concerns about the safety of nuclear energy. As such, specific policies directed at public-private partnership development of nuclear power projects and building strong regulatory frameworks are among the key government policy focus in this sub-sector. The Petroleum sub-sector policy focuses on the exploration and development of the Ghana's petroleum subsector in particular creating a favourable environment for investment in the upstream industry and while minimising economic risk. However, there are concerns over the petroleum upstream and downstream sectors. Some of these include the inadequate petroleum development production infrastructure, low Ghanaian content and participation, the capital requirement and financial risks of petroleum exploration, dwindling petroleum reserves, insufficient refinery and storage capacity, and the high cost of liquefied petroleum gas (LPG). Accordingly, policy directives including development and implementation of a national downstream infrastructure master plan, regulation and monitoring of operations of oil marketing companies, and the construction of infrastructure networks to link upstream and downstream have been proposed and implemented.

Ghana's energy policy is consistent with its industrial policy as spelt out in the national development plan that runs until 2057 (NDPC, 2017; see also NDPC, 2024). Within the 40-year development plan that runs from 2018 to 2057, energy security and building Ghana's energy infrastructure is central. As part of the national industrialisation agenda, the plan states the following:

> A reliable and robust national energy infrastructure stimulates economic growth, poverty alleviation and general wellbeing…it is imperative therefore, that if the country is to achieve economic growth and prosperity, and eradicate poverty as anticipated under the long-term national development plan (LTNDP), then adequate amounts of reliable and affordable electricity would have to be available to industry, social services and households (NDPC, 2021:316).

Further details of activities regarding how the energy sector will support Ghana's industrialisation are spelt out in the LTNDP's energy infrastructure plan (see Table 3). This demonstrates clear links between the national energy policy as discussed above.

Table 2: Public-Private Partnerships - 2021

Power	• Total investments excluding fuel for coal, oil, gas and nuclear will exceed $162 billion • Total power generation increased to 59,000 MW • Clean coal technology of 14,000 MW (23%) fully developed • Transmission & distribution losses reduced to 6% by 2057
Petroleum	• Sustainable exploration, development & production of oil & gas by Ghanaians • Extension oil and gas pipelines constructed across the country • New gas discoveries made to support declining stock • Nationwide access of households to LPG for cooking
Renewable Energy	• Increased share of renewable energy (solar, wind & biomass) 9,000 MW (15%) in national energy mix • Improvement in the efficiency of production and use of wood fuels • Renewable Energy to be mainstreamed into GIP • Renewable energy authority implementing REMP fully
Nuclear	• Increase in share of nuclear power to 19,000 MW (32%) • Ghana identifies roadmap and plan of action for 19 nuclear infrastructure issues across 3 phases for implementation • Intense industrialization of manufacturing capacity developed • First nuclear power plant to be in operation by 2030
Cross-cutting Issues Environmental Impact - climate change Contribution towards energy diversity and security Contribution towards equity in energy access Improvement of technical and management capacity of Energy staff	

Source: NDPC (2021)

The synchrony of the energy policy and the national development plan is demonstrated in the fact that they both prioritise ambitious targets for energy sub-sectors including Power, Petroleum, Renewable Energy and Nuclear Energy. The plan to increase total power generation to 59,000 MW (Table 3) within the national development plan, is consistent with the specific energy sector policy directions laid out in the national energy policy document. Similarly, the policy direction in favour of renewable energy is rooted in the national development plan's target of increasing the share of renewable energy (solar, wind & biomass) to 9,000 MW (15%) in the national energy mix. The more important policy concern with Ghana's energy policy is therefore not so much its connection to overall national development agenda. Of greater critical concern is the financing of energy sector projects. The next section addresses the institutional and financial context in which energy projects are financed.

2.2 The institutional and macro financial setting under which financing of energy projects occurs in Ghana

Attempts to finance Ghana's ambitious energy policy described above are set within mixed context of an elaborate institutional/legal framework and limited financial policy space. An extensive list of well-crafted legislations and established institutions govern the energy sector operations and projects. These cover issues ranging from power generation, transmission and distribution to petroleum exploration and renewable energy. Overall responsibility for the formulation, coordination, monitoring and evaluation of policies and programmes for the energy sector rests with the Ministry of Energy (recently renamed Ministry of Energy and Green Transition). There other sub-sectoral bodies and laws. The Volta River Authority (VRA), the Bui Power Authority and the Electricity Company of Ghana, are each mandated to either generate or distribute electric power across the country. Bodies such as the Energy Commission, the National Petroleum Authority, and the Environmental Protection Agency are responsible for regulating the operations of aspects of the energy sector that come under their purview. All these institutions are governed by corresponding or general laws that govern the sector. The Renewable Energy Act 2011, for instance provides for the development, management, utilisation, sustainability and adequate supply of renewable energy for the generation of heat and power. The Petroleum Exploration and Production Act 2016 regulates the grant of licenses for upstream petroleum activities and regulates the exploration, development and production of petroleum in Ghana.

In contrast however, the macro-financial context in Ghana, has been one of public financial distress, thus limiting government's capacity to meet its existing energy expenses and debt as well as fund new energy projects. Following the COVID-19 pandemic, Ghana's accumulation of external debts through the Eurobond markets put the country in a risk of debt distress. By late 2021, government lost access to the international capital market and began to suffer consistent downgrading by several credit rating agencies. Subsequently, the government was forced to seek debt relief from the IMF in July 2022 (Akolgo, 2023). The resulting agreement in May 2023, was a US$3B, three-year Extended Credit Facility between Ghana and the IMF (IMF, 2023). The fiscal constraints within the economic recovery programme which runs until 2026 has limited government spending.

In 2015 when Ghana faced severe power crisis, it had also become clear that State-Owned Enterprises (SoEs) in the power sector such as VRA, NEDCo, GRIDCO, ECA) and those in the petroleum sector (including TOR) had for so many years debts owed to domestic banks and trade creditors who supplied fuel or electric power to SoEs. This debt, as indicated earlier in this report, was estimated to be about US$2.5Bat the end of 2016. The enactment of the 2015 ESLA and its 2017 amendment, as well as incorporation of a Special Purpose Vehicle, ESLA PLC, was created to issue long-term bonds to resolve energy sector debts (ESLA PLC, 2025). As noted earlier, after more than a decade of the ESLA, Ghana's energy sector debt remains unresolved and as the minister of energy recent indicated, the sector's legacy debt has actually increased to about US$3B (Business and Financial Times, 2025). This is the difficult macro-financial context in which Ghana is now attempting to finance its green energy policy.

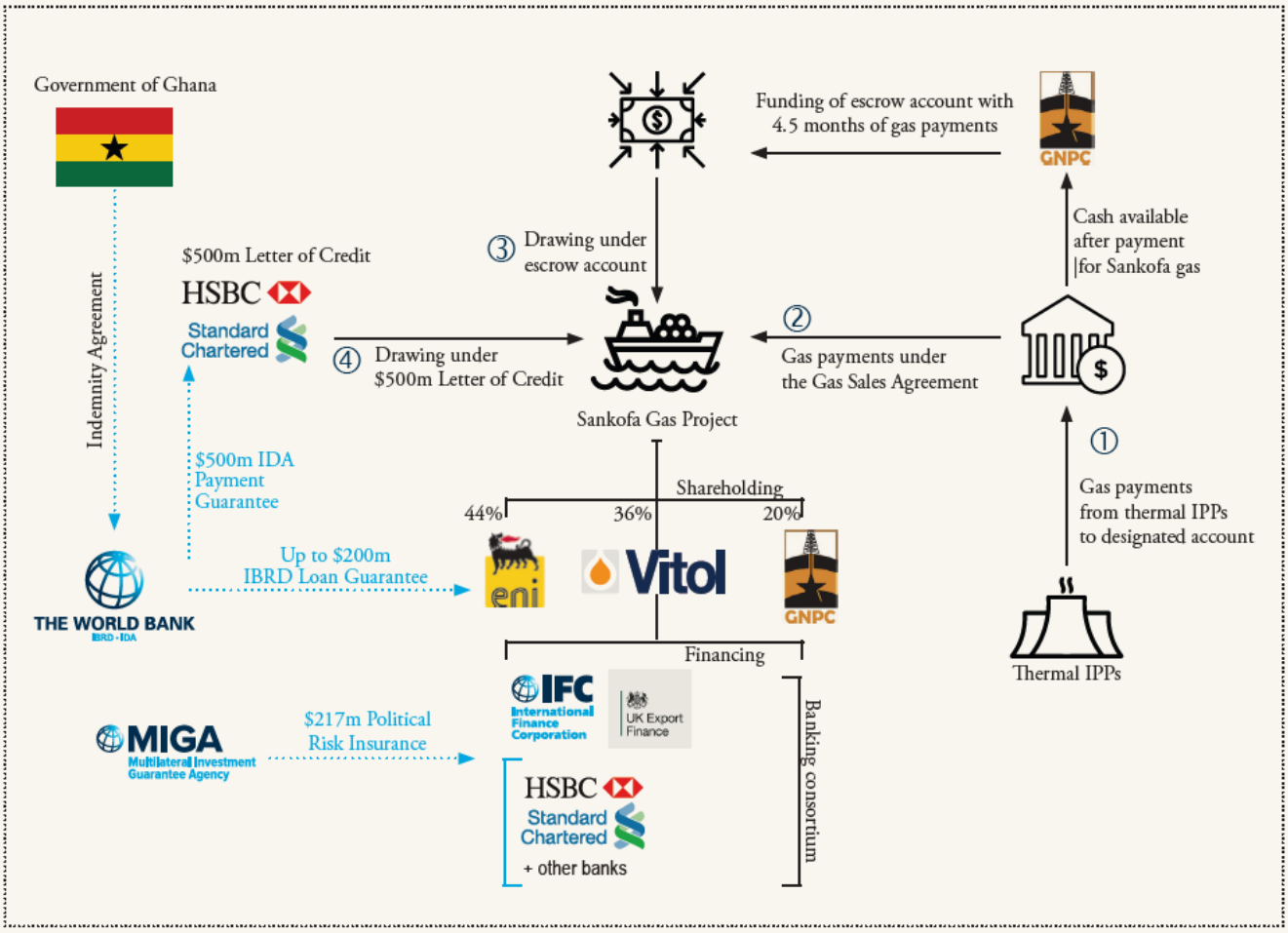
2.3 The fiscal costs of energy derisking: the case of the Sankofa Gas Project

In 2009, two years after discovering its first oil field (the Jubilee Field) in 2007, Ghana discovered two Non-Associated Gas (NAG) fields (Sankofa and Gye Nyame) located about 60km from Ghana's Western Coast. This also coincided shortly with a new electricity crisis that began in 2010 and worsened between 2013 and 2015. The power crisis, referred to locally as "dumsor", arose after several decades of over-reliance on the Akosombo hydroelectric dam and a heavy dependence on

the importation of expensive light fuel/gas for power generation (see Dye, 2023; Eshun and Amoako-Tuffour, 2016). Given the political pressure to address the power crisis, the John Dramani Mahama-led government instituted several energy sector reforms. Notable among these was the proposed Sankofa Gas Project to harness the NAG resources in addressing the nation's energy crisis.

Accordingly, in 2015, the government, through Ghana National Corporation (GNPC) entered into a joint venture with Eni (Italy) and Vitol (Netherlands). While the joint venture broadly covered the development of an integrated Oil and NAG project as part of the Offshore Cape Three Point (OCTP)[6] on the western coast, this report focuses on the gas component. The Sankofa Gas Project was estimated to have a potential production capacity of up to 1 trillion cubic feet (Tcf) of NAG. This project was expected to thus offer stable supply of gas to support about 1,000 MW of power generation capacity – the equivalent of 50% of electricity demand (World Bank, 2018). Following its schedule of the Sankofa Project, Eni began gas production in July 2018. In the more than seven years that have passed since gas flowed from the OCTP, the concern has been less about gas supply and more about the fiscal consequences that Ghana has faced and will continue to deal with in the foreseeable future as a result of the commercial arrangements that were agreed in the Sankofa project.

Figure 1: Guarantee Structure – Sankofa Gas Project



Source: World Bank (2018)

[6] Eni (2017) Sankofa: The first oil from Ghana's OCTP Development

In the joint venture arrangement, Eni, the block operator held a 44.44% share in the Sankofa Gas Project. Vitol controlled 35.36% of the shares and GNPC controlled the remaining 20% shares. The project was estimated to cost about $7.7billion and was financed by equity and shareholder loans. An international commercial banking consortium, led by the International Finance Corporation (IFC) and Standard Chartered Bank supported the refinancing of shareholder equity (specifically Vitol), partly replacing it with a commercial debt of US$1.35B. The Multilateral Investment Guarantee Agency (MIGA) provided US$214< in political risk guarantees to the commercial banking consortium. Additionally, the UK's export credit agency (UKEF) provided an export credit loan of US$400M. The guarantee structure outlining the shareholding and financing arrangement as well as the payment structure for investors was brokered by the World Bank and is shown in Figure 1.

To ensure that shareholders received payments for the sale of gas, a Gas Sale Agreement was reached for the creation of a single receipts account. All receipts from the sale of gas to thermal Independent Power Producers (IPPs) were paid directly into this account from which shareholders received payments based on shareholding. By the agreement, private investors were to be paid first. To forestall any shortfalls in payments provided in the agreement, an escrow account was created, with GNPC (in other words, Ghana) responsible for funding this account with US$205M (the equivalent of 4.5 months of gas sales to IPPs). This allowed private investors to receive interrupted payments. In the event that the escrow account was depleted Eni and Vitol had the option of drawing their payments from a US$500M letter of credit from HSBC and Standard Chartered Bank. If Eni and Vitol drew payments from this US$500M, GNPC had 12 months to repay HSBC and Standard Chartered Bank. This arrangement had a payment guarantee from the World Bank's International Development Association (IDA). In addition, the government of Ghana provided a sovereign guarantee of US$100M to investors in the event that the balance on the letter was reduced to US$100M. In case all these securities were exhausted, Eni shareholders could still receive payment from a final US$200M loan guarantee from the World Bank. In short, private investments from Eni and Vitol were fully de-risked, while GNPC and the Government of Ghana bore all the risks associated with the gas project.

On the one hand GNPC was subjected to a take-or-pay arrangement for 90% of gas supplied from Sankofa. This resulted, for instance to GNPC paying US$250M worth of unused gas in 2019[7]. On the other hand, the government of Ghana ultimate liability for similar take-or-pay deal for electricity supplied Therman IPPs in the Sankofa project. This too has resulted in government's annual debt of about US$500M to IPPs for unused power[8]. Ultimately, the deal has contributed to increasing the energy sector debts, which now stands at about US$3B as indicated above. Several bonds were issued between 2017 and 2023, under the ESLA PLC[9], to refinance energy sector accumulated from the Sankofa and other deals. In all, about US$8.3B worth of bonds were issued to address the energy sector debts. These debts contributed to the massive debt pile-up and the 2022-2023 debt crisis which has also necessitated the current US$3B IMF Extended Credit Facility.

[7] Bretton Woods Project 2021 https://www.brettonwoodsproject.org/2021/09/former-ghana-national-oil-company-head-links-world-banks-sankofa-guarantee-to-gas-power-plant-deals/

[8] Bretton Woods Project 2021 https://www.brettonwoodsproject.org/2021/09/former-ghana-national-oil-company-head-links-world-banks-sankofa-guarantee-to-gas-power-plant-deals/

[9] As indicated by the company, ESLA PLC is a Special Purpose Vehicle (SPV) incorporated as a public limited liability company to issue long-term bonds to resolve energy sector debts due to banks and trade creditors https://www.eslaplc.com/pages/about-us#company-profile

2.4 The dominance of derisking strategies in Ghana's energy sector – PPAs, energy investments, and prosperity plans

The implementation and financing model for Ghana's energy policies is provided for in the 'energy transition and investment plan' (Ministry of Environment, Science and Technology, 2023) and applied in the proposed green energy projects set out in the Ghana Climate Prosperity Plan (see Vulnerable Twenty Group, 2024). It is clear from the energy transition/investment plan and the climate prosperity plan that Ghana's approach to financing clean energies relies mainly on the government acting as a de-risker of private investments into the energy sector.

In the investment plan, the state is clear that there are funding challenges for its green energy agenda. However, it is quick to assert that the solution lies in marshalling the right mix of private sector and de-risking instruments. The investment plan goes further to specify a typology of the potential finance sources and providers of de-risking tools (see Table 4). Private sector financial institutions such as Blackrock, Pimco, BNP Paribas and FirstRand Bank are expected to provide investment financing for the energy projects in Ghana. Multilaterals (such as the World Bank and African Development Bank), bilateral institutions (such UK FCDO and GIZ) and host of green finance funds and private foundations are expected to provide de-risking instruments such as guarantees, insurance, and or first-loss-capital. The overall de-risking logic is summarised in the plan as follows: "capital markets could provide the largest funding pool, but some project archetypes might require de-risking to become bankable" (Ministry of Environment, Science and Technology, 2023:30). Some of these projects that the Ministry envisions would require high levels of de-risking including electric grid infrastructure and distribution connections, mini-grid/off-grid solutions, among others.

Table 4: Ghana Energy Transition Investment Plan –Providers of Finance and De-risking Instruments

CORE FINANCE PROVIDERS				**PROVIDERS OF DE-RISKING INSTRUMENTS** **e.g., guarantees/insurance, first-loss-capital, guarantees against political risks, etc.**				
Private sector			**Domestic public sector**	**International institutions**				
Commercial financial institutions	**Corporations**	**Households and individuals**	**Public institutions**	**Multilateral DFIs**	**Bilateral DFIs**	**National DFIs**	**Green finance funds**	**Private foundations**
Ghana Commercial Bank FirstRand Bank BNP Paribas Blackrock Pimco Major pension funds	BHP Billiton Royal Dutch Shell	N/A	Ghana Ministry of Finance	World Bank African Development Bank	French Agency for Development UK FCDO USAID GIZ	Development Bank of Ghana	Green Climate Fund Global Environment Facility Adaptation Fund Clean Technology Fund	Rockefeller Foundation Climate Works Foundations Bloomberg IKEA Foundation Bezos Earth Fund

Source: Ministry of Environment, Science and Technology (2023)
https://www.seforall.org/system/files/2023-09/report-ghana-etip_WEB.pdf

Table 5: Ghana Climate Prosperity Plan - PPPs in Ghana's Climate Financing

Project Name	Duration	Project Type	Project Objectives	Estimated Investment Costs (USD)	Funding Sources		Concessional/ de-risking tool or grant
					Government/Multilateral/Bilateral	Private Sector	
Accelerated Energy Transformation for Power Resilience and Security	2023-2030	Renewable energy and resilience	500 MW by 2025 1.5 GW by 2027 2 GW by 2028 2.5 GW by 2029 3 GW of installed capacity by 2030	$16.8B over 8 years (including 5% in guarantees)	Government: Support with a bankable PPA MDBs: 30% bilateral or MDB concessional Debt	50% private debt and 20% equity	5% guarantees (including a subsidy account to index against the US dollar and to ensure local currency financing to the maximum)
Urban Greening & Sponge Cities Project	2023-2030	Resilience	• Leverage nature-based solutions to diminish flood intensity and frequency in Accra and other coastal cities • Enhancement of green spaces in urban areas to reduce heat island effects, increase shade, and provide new recreational areas • Increased water quality and groundwater, with co-benefits to ecosystems, health and recreation • Foster biodiversity through the establishment of green areas and biodiversity touch points throughout urban areas	$415M	MDBs: 70% of long-term and concessional loans from a mix of Green Belt and Road Initiative and Africa Adaptation Acceleration Program (AAAP)	20% of equity and joint venture support	10% in grants and de-risking in order to enable local currency financing
Accra-Kumasi City Electric Bus Project	2023-2025	Transportation	• Identify relevant routes for a new fleet of electric buses • Operationalise and deploy a new fleet of 100 high-occupancy electric buses in and between Accra and Kumasi as well as 10 solar-powered charging stations • Capacity-building of bus operators and relevant transportation sector actors to ensure successful deployment of the fleet	$53,754,581 over 3 years	Government: US$20,511,811 in subsidy from Ghana Ministry of Transport	US$26,776,388 in loans from Ecobank	US$6,466,382 in grants from GCF

Source: Vulnerable Twenty (V20) Group (2024) https://www.v-20.org/resources/publications/ghana-climate-prosperity-plan

Ghana's Climate Prosperity Plan was recently crafted under this increasingly pervasive de-risking logic. Most of the de-risking instruments presented in the energy transition and investment plan are applied to specific interventions noted in the Ghana Climate Prosperity Plan. For instance, the Accelerated Energy Transformation for Power Resilience and Security (Table 5) which is to be located in the Volta Region, will require total funding of about US$16.8B 8B over the course of its

expected 8-year duration. Out of this financing requirement, government of Ghana is contributing 30%; the private sector is expected to contribute the remaining 70% via private sector debt (50%) and private sector equity financing (20%). Meanwhile, government is expected to further provide a 5% guarantee (including subsidy against tariffs and the fluctuation of the US Dollar in terms of local currency). This government guarantee is intended to de-risk the private sector investments into this renewable energy and resilience project in the Volta Region.

This pervasive recourse to private-sector solutions to public energy infrastructure provision and the derisking of these private investments has been the norm for PPP investments into the Ghanaian energy sector. This has most clearly demonstrated in the PPAs that government entered into in the last decade. Since 2007, government has entered into more than 10 contracts with IPPs to meet Ghana's energy needs. A summary of the PPAs, their ownership, and derisking arrangements and costs of derisking are indicated in Table 6. The PPAs involve mostly foreign-owned institutional investors that range from banks to pension funds and government agencies. These are predominantly American, European, and to a less extent Chinese investors. On face value, these PPAs are simply to enable IPPs (that is the energy companies or consortiums) deliver more kilowatts of either thermal or solar electric power to the Electricity Company of Ghana (ECG) so as to meet the energy needs of the country. On a deeper analysis of the ownership structure of these IPPs, their origins, and their financiers or investors provide a fairer idea as to why the PPAs produce problematic outcomes such as the large energy sector debt already alluded to earlier.

A prime example is the case of two plants primarily owned by US-based Denham Capital – Amandi Power (Twin City) and Early (Bridge) Power (see Table 6). Located in Tema, Great Accra, the Early Power project is a PPA concluded in 2016 for the supply of 200MW of thermal power to the ECG. Much like the case of Amandi which has already been discussed earlier, Early Power has multiple investor interests, not least the role of USAID which is as a partner on the plant's website. The plant is expected to shift from LPG to natural gas in a planned Stage II that could more than double the plant's capacity. The total cost is expected to stand at US$1.2B with the completed first phase amounting to US$611M, according to ESI Africa. The PPA contains a Put and Call Option Agreement which guarantees the plant's debt in the case of termination (the first time the Ghanaian government has agreed to such a structure). Financial close was structured under vendor financing from the EPC contractor's parent, Mytilineos, which provided US$314M. A guarantee of USD 50M was issued by the Private Infrastructure Development Group (PIDG) on the transaction. The government of Hungary provided US$70M to purchase GE gas turbines while this country's export-import bank contributed to financing the project. Both Denham Capital's plants (Amandi Power and Earl Bridge Power) pose huge fiscal cost ultimately born by the government of Ghana. Besides its debt financing of about US$418M, the Amandi Power PPA resulted in about 71M Cedis in foreign exchange losses since the contract was US Dollar denominated.

Table 6: PPAs, Institutional Investors and Derisking in Ghana

Project Name/ Start Year	Location	Capacity (MW)	Primary and Secondary owners	Debt providers	Project costs (USD)	Derisking Costs	Derisking commentary
Sunon Asogli Power Project I 2007	Tema, Greater Accra	200	Shenzhen Energy (China; 60%) China-Africa Development Fund (China; 40%)	China Development Bank (China)	$700M	₵194M (Forex losses)	In 2024, the plant was shut down due to ECG's accrual of US$ 259M in net receivable debt (despite Sunon Asogli not charging ECG for idle capacity and despite payments from the Cash Waterfall Mechanism), yielding debt renegotiations with ECG. This was the first power plant to be privately held in Ghana. Shenzhen Energy is considered by Fitch to be a government-related entity, due to its "strategic importance" to the municipality of Shenzhen. The China-Africa Development Fund, its secondary equity holder, is a private equity pool funded by the China Development Bank with the aim of supporting Chinese ventures in Africa. Guangdong Power Engineering, the EPC contractor according to Power Technology, is a Chinese SoE. The plant's natural gas is obtained from the West Africa Gas Pipeline (paid by the government) and in 2016, the plant moved to become an electricity exporter. Sunon Asogli notes that the US$ 700M construction was "executed without any guarantee from government." The China Development Bank provided US$ 580M in loans, collateralized by Shenzhen's equity, to support the construction of all phases. The plant's PPA is USD-denominated leading to Forex losses of GHS 194M in 2021, for example, according to PURC.
Cenpower Kpone Independent Power Plant 2012 (thermal)	Tema, Greater Accra	360	African Finance Corporation (Africa; 32%) Sumitomo (Japan; 28%) Ghanaian Entrepreneurs (Ghana; 21%)	FirstRand Group (South Africa) Nedbank (South Africa) Standard Bank (South Africa) FMO (Netherlands)	$650M (debt) $250M (equity)	₵172M (Forex losses)	The plant was the first greenfield IPP project in Ghana to assume fuel supply risks. In 2020, Cenpower agreed to convert its plant towards natural gas to relieve pressure on the government from take-or-pay agreements with fuel suppliers. Sumitomo, AIIM, and the FMO were not equity holders prior to financial close while InfraCo has since exited the project. Unlike other Ghana energy deals, the details of the financing were public and funding was initially divided between US$ 250M in equity and US$ 650M in debt. The deal structure was lauded internationally. Public funds have contributed to equity financing via the African Finance Corporation (owned by private investors and the Bank of Nigeria but established by African states) and the FMO (the Netherlands' development bank). Old Mutual owns its equity via AIIM. Commercial debt financing was covered by the Export Credit Insurance Corporation of South Africa. DFI financing was especially important (FMO, KfW, OFID, DBSA, and IDC). PIDG is financed by the World Bank. Group

Project Name/ Start Year	Location	Capacity (MW)	Primary and Secondary owners	Debt providers	Project costs (USD)	Derisking Costs	Derisking commentary
				KfW Group (Germany)			Five was removed as EPC amidst construction. Power Africa (USAID) was involved in providing services towards financial close. The plant's PPA is USD-denominated, leading to Forex losses of GHS 1172M in 2021, for example, according to PURC.
AKSA Energy 2013	Tema, Greater Accra	370	Kazanci Holding (Turkey; 100%)	Goldman Sachs (United States)	$750M	$27M (Tax waiver) ₵91M	The plant was expanded to reach a capacity of 370 MW in 2018, with Aksa Energy collecting capacity charges. Capital costs were supposedly reduced through the transfer of equipment from an existing plant in Samsun, Turkey. A new, USD-denominated PPA was signed for an additional 15 years in 2022, partly to accelerate the plant's transition from dual fuel to natural gas. As of the signature of the new PPA, the plant had already generated a US$ 700M charge for capital recovery and operation and maintenance despite a utilisation rate of 16% between 2017 and 2022. The new expected capital recovery and M&O charge for the additional years of the PPA is expected to sum to US$ 750M against a projection of USD 60M in total investment costs from ACEP, according to Norvan Reports. Aksa (Kazanci) has attracted scrutiny from the US government for alleged bribery payments to Ghanaian officials. The new PPA's take-or-pay rate stands at 40%. From ACEP: "The mysteries surrounding the AKSA project would be subject to criminal investigation in any serious country." In 2018, the Ghanaian parliament approved a USD 27M tax waiver to make the project "more bankable." Goldman Sachs, which owned 16.6% of Aksa Energy at the time, brokered the initial bribery-tainted deal, according to the Financial Times. The plant's PPA is USD-denominated leading to Forex losses of GHS 91M in 2021, for example, according to PURC.
Amandi Power (Twin City) 2013	Aboadze, Western	200	Denham Capital (United States) Anergi (United Kingdom)	FirstRand Group (South Africa) Nedbank (South Africa)	$418M (debt) $138M (equity)	! 71M (forex losses)	Private equity presence is extensive for this project. Denham Capital, the majority owner, is a private equity fund which has supported USAID's Power Africa initiative. It holds its equity through Endeavor Energy. Anergi (formerly Aldwych) has received investments from the Netherlands' FMO and the Shell Foundation. USAID helped broker the project's financial close. Old Mutual maintains equity through AIIM. Harith is partly owned by South Africa's Public Investment Corporation, the entity responsible for managing the South African Government Employees Pension Fund.

Project Name/ Start Year	Location	Capacity (MW)	Primary and Secondary owners	Debt providers	Project costs (USD)	Derisking Costs	Derisking commentary
			Old Mutual (South Africa)	International Development Finance Corporation (United States)			Total cost was US$ 556M, according to AIIM, with US$ 418M in debt funding and US$ 138M in equity financing. BII and DFC are development finance institutions of the UK and US respectively. The Amandi plant shut down during the current Ghanaian energy crisis due to unpaid debts receivable, according to 3News. The plant's PPA is USD-denominated leading to Forex losses of GHS 71M in 2021, for example, according to PURC.
CENIT Thermal Power Plant 2013	Tema, Greater Accra	110	Social Security and National Insurance Trust (Ghana; 100%)	African Development Bank (Africa) FMO (Netherlands) Private Infrastructure Development Group (Europe)	$96M (debt)	! 36M (forex losses)	The plant was the first IPP project to be wholly Ghanaian-owned; SSNIT is the administrator of Ghana's First Tier Pension Scheme. Additionally, EPC services were contracted domestically. The plant shares facilities with the Volta River Authority's adjacent plant under a SSA agreement. CENIT's PPA is USD-denominated leading to Forex losses of GHS 36M in 2021, for example, according to PURC. CENIT was early in renegotiating its PPA with the government in 2020, accepting to convert the plant into a tolling structure and reducing its capital recovery tariff (previously 38.9%) which is expected to save the state US$ 200M over the life of the PPA. This was done under the Energy Sector Recovery Program, in collaboration with the World Bank. In 2008, AfDB, FMO, and PIDG agreed to provide loans for the project totaling US$ 96M according to AfDB documents.
Karpower Project Ghana 2014	Sekondi, Western	470	Karadeniz Energy (Turkey; 100%)	Deutsche Bank (Germany)	$1.2B	$379M (debt from idle capacity) $118M (capital recovery) $50M (Tax relief) ! 224M (forex losses)	The PPA was extended from 10 to 20 years in 2018, leading to accusations of cost padding and corruption from opposition parties. In 2019, the powership was moved to Sekondi Naval Base to use indigenous natural gas instead of HFO. In 2025, Karpowership threatened a shutdown over ECG's USD 379M debt. According to news outlet Modern Ghana, the annual capital recovery charge fixed maintenance and operations amounted to USD 118M per year for the government for Phase I (225 MW), without the government repossessing the powership after the length of the PPA. Karpowership is additionally exempt from all applicable taxes (e.g., personnel income tax) and benefits from a USD 50M standby guarantee. The Deutsche loan facility was refinanced at USD 250M. Karpowership took part in contract renegotiations with the government in 2022. The powership has long not produced the expected supply of

Project Name/ Start Year	Location	Capacity (MW)	Primary and Secondary owners	Debt providers	Project costs (USD)	Derisking Costs	Derisking commentary
Early (Bridge) Power 2016	Tema, Greater Accra	200	Denham Capital (United States) GE Power (United States) Quantum Group (Ghana)	Mytilineos (Greece) Private Infrastructure Development Group (Europe) Hungarian Export Import Bank (Hungary)	$611M (initial cost) $1.2B (expected cost)	$50M (in Guarantees)	USAID is listed as a partner on the plant's website. The plant is expected to shift from LPG to natural gas. A Stage II is planned which could more than double the plant's capacity. The total cost is expected to stand at US$ 1.2B with the completed first phase amounting to US$ 611M, according to ESI Africa. The PPA contains a Put and Call Option Agreement which guarantees the plant's debt in the case of termination (the first time the government agreed to such a structure). Financial close was structured under vendor financing from the EPC contractor's parent, Mytilineos, which provided US$ 314M. A guarantee of US$ 50M was issued by PIDG on the transaction. The government of Hungary provided US$ 70M to purchase GE gas turbines while this country's export-import bank contributed to financing.
BXC (Onyandze) Solar 2013	Winneba, Central	20	Beijing Xiaocheng (China; 100%)		$30M	! 4M (forex losses)	The PPA is USD-denominated leading to Forex losses of GHS 4M in 2021, for example, according to PURC. The initial capital cost was US$ 30M, financed by the owner. Renewable energy PPAs, like with BXC, were negotiated on a take-and-pay basis, reducing financial liabilities to the government of Ghana. The plant was considered the first large-scale solar installation in the country.
Gomoa Onyaadze (Meinergy) Solar 2015	Winneba, Central	20	Meinergy (China; 100%)		$30M	! 3M (forex losses)	The cost of construction was US$ 30M according to Modern Ghana. The plant's PPA is USD-denominated leading to Forex losses of GHS 3M in 2021, for example, according to PURC. Renewable energy PPAs, like with BXC, were negotiated on a take-and-pay basis, reducing financial liabilities to the government of Ghana.
Kumasi 1 (formerly AMERI) 2015	Anwomaso, Ashanti	250	Volta River Authority (Ghana; 100%)		$510M (initial cost) $34M (relocation cost)	$510 (capital refinancing)	The plant was initially owned by African and Middle East Resources Investment Group (UAE) under a 5-year operate and transfer PPA with the government of Ghana. The overpayment for the AMERI plant was a press scandal in Ghana, with capital and financing costs, recouped from the government over the duration of the PPA, standing at US$ 510M (excluding operations and maintenance). The VRA was also responsible for the gas input. According to Ghana Web, listed prices for the GE "power on wheels" equipment used and the balance of plant amount to US$ 250M. Financing costs, using AMERI as the broker, added US$ 260M, an effective interest rate of 21% in USD. AMERI has been accused of overcharging while Ghanaian officials have been accused

Project Name/ Start Year	Location	Capacity (MW)	Primary and Secondary owners	Debt providers	Project costs (USD)	Derisking Costs	Derisking commentary
							of bribe-taking. In 2022, the plant was finally taken over by the state, via the Volta River Authority. The plant was subsequently moved to Kumasi for USD 35M and renamed Kumasi 1. According to former energy minister, the takeoff rate was 14.25 cent/kWh during the PPA. The Africa Center for Energy Policy has repeatedly and harshly criticised the deal.
Sankofa Gas Field 2015	Sanzule, Western	1 TcF	Eni (Italy; 44%) Vitol (Switzerland; 36%) Ghana National Petroleum Corporation (Ghana; 20%)	International Finance Corporation (World) UK Export Finance (United Kingdom) HSBC (United Kingdom)	$1.35B (debt) $400M (export credit)	$250M (unused gas) $500M (unused power from associated IPPs)	The World Bank provided a USD 500M guarantee for the payment obligations undertaken by the Ghana National Petroleum Corporation under the arrangement (to back a letter of credit from HSBC and Standard Chartered). The IFC mobilized more than US$ 1B in funding, including US$300M of its own funds. MIGA provided a US$ 217M political risk insurance for the project. UK Export Finance provided a US$ 310M loan. The GNPC funded a gas payments escrow account for 4.5 months of gas payments as part of the financing structure (US$ 205M). The Government of Ghana obtains 5% of in-kind production as royalties. Eni's shareholder loans are backed by the IBRD with a loan guarantee of US$200M. Total capital costs (including exploration) stand at US$ 7.9B. The initial nominal gas price in the GSA stood at 9.8$/mmBTU although it remains adjustable based on capital costs. The GNPC has a 90% take-or-pay mandate to purchase gas which, according to the African Forum and Network on Debt and Development, means that "the risk of this investment is falling on the Government of Ghana."

Source: REDCAJU Database

In contrast to the Denham Capital plants, two primarily Chinese-owned projects (BXC Solar and Gomoa Onyaadze Solar) provide cleaner, renewable energy (solar power) with fewer investors or financiers. BXC Solar, considered the first large-scale solar plant in Ghana, is fully owned and financed by China's Beijing Xiaocheng. While the PPA does not involve any complicated financial arrangements, it is nonetheless a US Dollar-denominated contract which has led to foreign exchange losses (about US$4m in 2021 as indicated in Table 6), even though much less than PPAs with the US-based Denham Capital. Similarly, the Gomoa Onyaadze Solar is fully owned by China's Meinergy unlike US plants with multiple institutional investors. Foreign exchange losses are also significantly lower from the PPA (about $3M as indicated in Table 6).

The implications of these fiscal costs are better understood in terms their constraints on government's financial policy space. The losses resulting from PPAs are not only imposing higher electricity cost on citizens. More importantly, it is depriving the state of financial resources that could have been used to support social services in education and health. For instance,

the de-risked Karpower PPA (see Table 6) resulted in over US$500M costs (debt from idle capacity, tax reliefs and capital recovery) to the state. This is about the same amount as the social expenditure allocation to the education and health sectors in Ghana's 2025 budget. In particular, the budget appropriation for social spending on education and health, their US Dollar equivalent, was about US$192.1M and US$286.5M (see Parliament of Ghana, 2025). Derisking costs from other PPA such show similar records of millions spent to guarantee the investments of foreign corporation, finances that could have been used to support social programs like the Free Senior High School Program and the National Health Insurance Scheme.

Conclusion

It is undisputed that the dire consequences of climate change loom large across the globe and particularly developing and emerging economies. A strong climate policy that addresses this challenge is essential. Like many other African countries, Ghana not only faces a challenge of energy security, but also the urgent need to move towards cleaner, renewable and climate friendly energy sources. In this dual policy agenda to meet the nation's energy needs and protect the climate, access to finance is highlighted as the major concern. Following, a pattern of government's historical reliance on public private partnerships under the direction of IMF-World Bank led neoliberal development ideologies, Ghana's current energy policy is underpinned by a recourse to private finance. This reliance on institutional capital is problematic since it has failed support the state's struggle to provide secure, affordable energy for households and businesses in Ghana, as evidenced in the pattern of electric power crises, most recently in 2024 and early 2025. On the contrary, reliance on public private partnerships in the energy sector has positioned the state as a derisker of private capital from mostly Euro-American institutional investors. Protected from risks such as foreign exchange losses, political risks and excess power generation, independent power producers such Early Power, Amandi Power, CENIT Thermal Power, Karpower, among others are accumulating profits for investors based in the US, Europe and China. And while these foreign energy firms make huge returns on their derisked investments, the Ghanaian government is saddled with energy sector debts. The ultimate consequence is that citizens pay more of power as various governments attempt to address the energy sector debt.

Overall, this report has showed that the current model of financing Ghana's energy policy and its Nationally Determined Contributions to the climate agenda, which relies on mobilising foreign institutional investments has produced the adverse outcomes stated above. Therefore, this private-finance model should be reconsidered in order to meet Ghana's energy needs and facilitate a just, transformative and equitable shift to cleaner, climate friendly energy.

Recommendation

It must be stated categorically that Ghanaian policy makers have made significant efforts towards achieving its energy sector goal of providing "energy services in a reliable, cost-effective and environmentally friendly manner" as set out in the nation's 2021 National Energy Policy. However, the state's approach to derisking and attracting foreign institutional investments for the extraction of energy resources (natural gas/crude oil) and electric power production, has largely supported profiteering by foreign investors and leaving Ghana's energy sector indebted, and citizens paying unbearable costs for electricity. We suggest that in place of a derisking state, a green developmental state, as has been advocated for in other African countries , is what Ghana urgently needs. Ghana's own history of developmentalism in the early decades of independence should serve as lesson for policy direction towards a green industrial policy. For a climate secure and prosperous Ghana, government's role in energy projects cannot remain that of a de-risker.

Instead, a prominent role for the state will allow it to organise sufficient financial resources through financial and monetary policy reforms. In that context, the government-led climate action can effectively support domestic participation in, and ownership of energy sector projects. This would allow government to direct and discipline any necessary private participation in the implementation of climate policies. In other words, what Ghana needs is a 'big green state' (Gabor and Braun, 2025) to mobilise and direct credit to productive, green sectors while at the same time

disincentivising and penalising dirty credit. There is a strong history of government-led industrial policies in Ghana. From the 1960s up until the mid-1980s, when IMF/World Bank liberal reforms dominated development governance, various Ghanaian government combined relied on a mix of development banks, central bank credit guidance policies, and government subsidy of vital sectors to lead import substitution industrialisation. Similarly, Kwame Nkrumah's development state agenda produced large infrastructure such as the Akosombo Hydroelectric Dam, Tema Oil Refinery, Tema Motor and the construction of university infrastructure across the country. In some cases, private capital was welcomed to support the state agenda and not to substitute it, and Nkrumah's government was largely successful in disciplining both domestic and foreign capital in line with his development agenda. Tema Oil Refinery and the Volta River Authority had for many years been successful oil refinery and power generating public corporations under a state-led development model. However, structural adjustment liberalization policies weakened their capacities. It is crucial to learn from the successes of these state-owned energy sector institutions in Ghana's history and provide renewed support to revive them in pursuit of current energy needs.

Another crucial policy decision should involve increasing domestic public ownership and control over energy projects. Legislations should encourage a majority indigenous share in energy sector projects in the power sector such as Sankofa Gas Project and the other renewable energy projects outlined in the Ghana Climate Prosperity Plan. This is not to suggest that foreign expertise in power generation or gas extraction should not be solicited where necessary. Mutually beneficial contractual arrangements can support drawing on foreign technologies without handing out domestic energy to foreign private financiers. Larger domestic ownership will not only provide room for better state control and supervision, it will be key to a successful Energy Policy drive that can adequately address Ghana's energy needs and climate threats.

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