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AFRICA CENTRE FOR CRITICAL MINERALS & ENERGY TRANSITION

POLICY BRIEF

Can Oil-Producing Economies in Africa Transition?

Ghana's Evidence and the Critical Minerals Opportunity.

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Abbreviations and Acronyms

Acronym	Meaning
AfCFTA	African Continental Free Trade Area
AGMS	African Green Minerals Strategy
AMV	African Mining Vision
DRC	Democratic Republic of Congo
ESG	Environmental, Social, and Governance
IEA	International Energy Agency
IMF	International Monetary Fund
SMEs	Small and Medium-sized Enterprises
FDI	Foreign Direct Investments
PIDA	Programme for Infrastructure Development in Africa

1.0 Executive Summary

Oil once gave many African economies a sense of security. It funded budgets, supplied foreign exchange, and shaped national development plans. But that certainty is weakening. As the global energy system shifts toward renewable power and mineral-intensive technologies, oil-producing economies face a difficult question: can they use today's fossil revenues to transition to a sustainable energy future?

This brief uses Ghana's experience to examine that question. Ghana is not Africa's largest oil producer, but its transition evidence offers a useful policy signal for other resource-dependent economies. The central argument is that oil-producing African economies do not have to abandon oil overnight, but they cannot afford to treat it as a permanent development anchor. The real task is to convert petroleum wealth into post-petroleum capability while positioning critical minerals as a platform for industrial value creation.

The evidence is both hopeful and cautionary. Ghana's experience shows that a shift from non-renewable to renewable energy pathways is possible under supportive policy and investment conditions. Yet the same evidence suggests that growth in fossil-fuel production can weaken renewable power generation. Trade openness and foreign direct investment can accelerate transition when directed toward clean energy, local supply chains, and technology transfer. Left unguided, however, they can deepen the old pattern of extraction without transformation. Africa's critical minerals add another layer to this transition story. The opportunity is not limited to countries with large mineral deposits. Oil-producing economies can also participate through regional value chains, renewable power systems, logistics, processing, finance, and technical services.

The brief recommends a managed transition with industrial diversification. Governments should channel petroleum revenues into renewable energy, grid systems, skills, and mineral value chains. Firms should move beyond extraction. Development partners should de-risk strategic investments and support African-led capabilities.

> The choice is no longer between oil and transition. It is between using oil to delay the future, or using it to build one. Ghana's evidence shows that transition is possible; policy will decide whether it becomes transformative.

2.0 Context

Oil once looked like the safest route to national prosperity. For many oil-producing African economies, it promised revenue, foreign exchange, and the fiscal space to fund development. Today, that certainty is fading. The question for these economies is no longer whether fossil revenues have mattered. It is whether they can still anchor development in a world moving steadily toward cleaner energy and mineral-intensive technologies.

This shift matters because oil has shaped the economic architecture of several African states. Countries such as Nigeria, Angola, Algeria, and more recently Ghana have relied on petroleum exports to support and finance major development spending. Yet the global energy economy is moving in a different direction. Demand is rising for the minerals that power clean-energy and advanced technologies, while major economies are tightening climate commitments and restructuring supply chains around low-carbon industries. Countries that once competed for oil are now competing for lithium, cobalt, graphite, manganese, nickel, and rare earths.

For Africa, this creates both pressure and possibility. Fossil-fuel revenues are becoming more exposed to long-term market and policy risks, just as critical minerals are opening a new window for industrial growth. That opportunity should not be understood only in terms of mineral deposits. In a regional market, oil-producing economies without major critical mineral reserves can still participate by financing renewable power, developing processing and logistics hubs, supplying technical services, and linking domestic firms to cross-border mineral value chains. The real constraint is that much of the higher-value activity still takes place outside Africa. Without deliberate policy choices, the continent could move from crude-oil dependence to raw-mineral dependence, carrying an old vulnerability into a greener global economy.

Ghana provides a useful lens for examining this challenge. Its oil sector is younger and smaller than those of Africa's major producers, but its experience shows how policy decisions can shape energy and development outcomes. Empirical evidence suggests that movement from non-renewable to renewable energy pathways is possible when trade, investment, and institutional reforms support cleaner energy growth. Ghana's case therefore raises a wider policy question for oil-producing and resource-rich African economies: can they use existing resource revenues and rising critical minerals demand to build diversified, resilient, and value-adding economies, rather than repeat another cycle of extractive dependence?

3.0 The Problem:

Oil Dependence Can Slow the Transition It Should Finance

The answer begins with a strenuous policy reality. Oil-producing economies need capital to move toward cleaner energy and higher-value industries, and oil revenues can provide part of that capital. Yet those same revenues can also protect the old system. They can strengthen fossil-fuel interests, sustain carbon-intensive infrastructure, and delay the reforms needed for a different economic future.

Ghana's evidence captures this tension clearly. The country has a 76.5% probability of moving from a non-renewable energy state to a renewable energy state, and an 80.2% probability of remaining in a renewable energy state over a five-year period (**see Figure 1**). These findings suggest that transition is not a distant aspiration; it is empirically plausible. However, the same evidence also shows that a 1% increase in non-renewable energy consumption reduces renewable energy generation by 0.20%. This points to a crowding-out effect, where fossil-fuel expansion weakens the very renewable pathway that oil revenues should help finance.

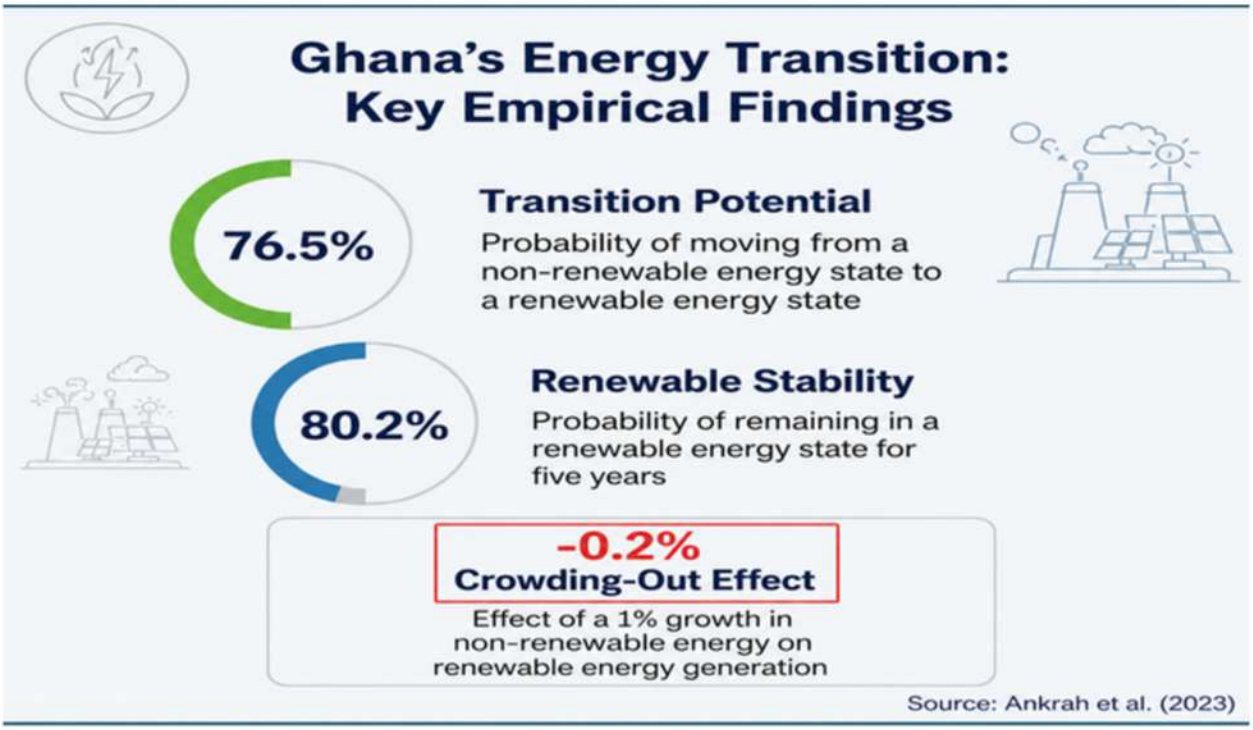
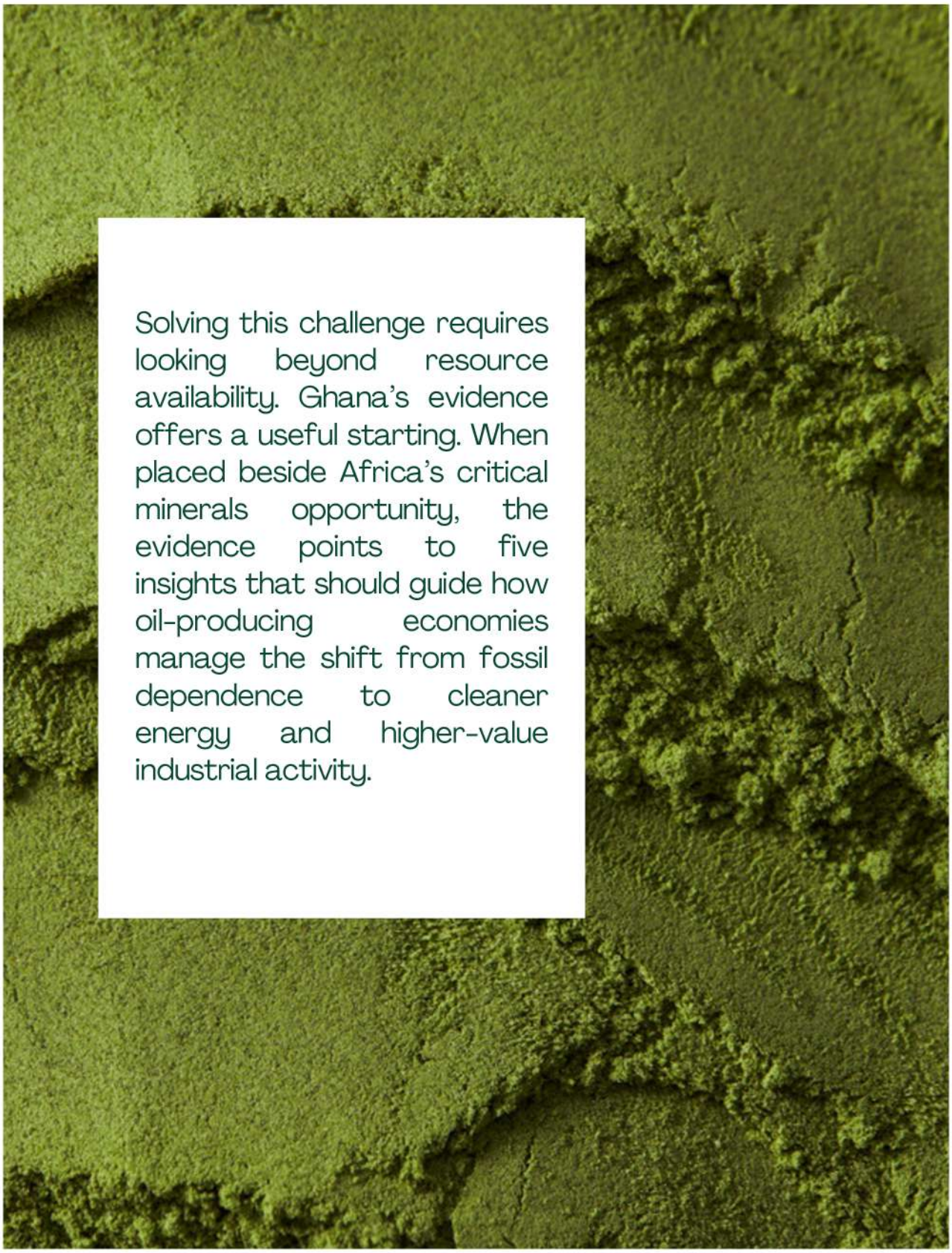


Figure 1: Ghana's Empirical Energy Transition Findings
Source: Author's construction based on Ankrah et al. (2023)
Note: This figure presents selected findings from Ankrah et al. (2023), Is energy transition possible for oil-producing nations? Probing the case of a developing economy. Further methodological and empirical details are available in the original article: https://doi.org/10.1016/j.clpl.2023.100031

The implications extend beyond the power sector. When public finance, infrastructure planning, and political incentives remain tied to hydrocarbons, governments may keep investing in assets that look useful today but become costly tomorrow. Firms receive mixed signals. Citizens face delayed access to cleaner and more reliable energy. Institutions struggle to plan beyond immediate revenue needs. In this way, oil dependence becomes more than a source of income; it becomes a policy habit that slows diversification.

The same logic now applies to Africa's critical minerals economy. If countries extract transition minerals without building processing capacity, stronger local firms, and credible industrial linkages, they may reproduce the old dependency pattern under a greener label. The policy challenge, therefore, is how to use today's fossil revenues to accelerate renewable energy, while ensuring that critical minerals support value addition rather than another cycle of raw export dependence?

4.0 Key Insights



Solving this challenge requires looking beyond resource availability. Ghana's evidence offers a useful starting. When placed beside Africa's critical minerals opportunity, the evidence points to five insights that should guide how oil-producing economies manage the shift from fossil dependence to cleaner energy and higher-value industrial activity.

4.1 Transition Is Possible, but Not Automatic

Ghana's case suggests that transition becomes possible when policy, investment, and institutional conditions support cleaner energy growth.

Empirically, Ghana has a 76.5% probability of shifting from a non-renewable energy state to a renewable energy state, and an 80.2% probability of remaining in a renewable energy state over a five-year period (**See Figure 2**). This shows that an oil-producing economy can move toward renewable energy. It also challenges the view that oil-producing economies are permanently locked into fossil-fuel dependence.

What's more, Ghana's case suggests that transition becomes possible when policy, investment, and institutional conditions support cleaner energy growth. Still, the result should not be read as a guarantee. Renewable energy projects need credible tariffs, reliable grid access, predictable regulation, and patient finance. The policy implication is direct. Oil-producing economies must treat renewable energy as a strategic investment frontier, not as a marginal add-on to the fossil economy.

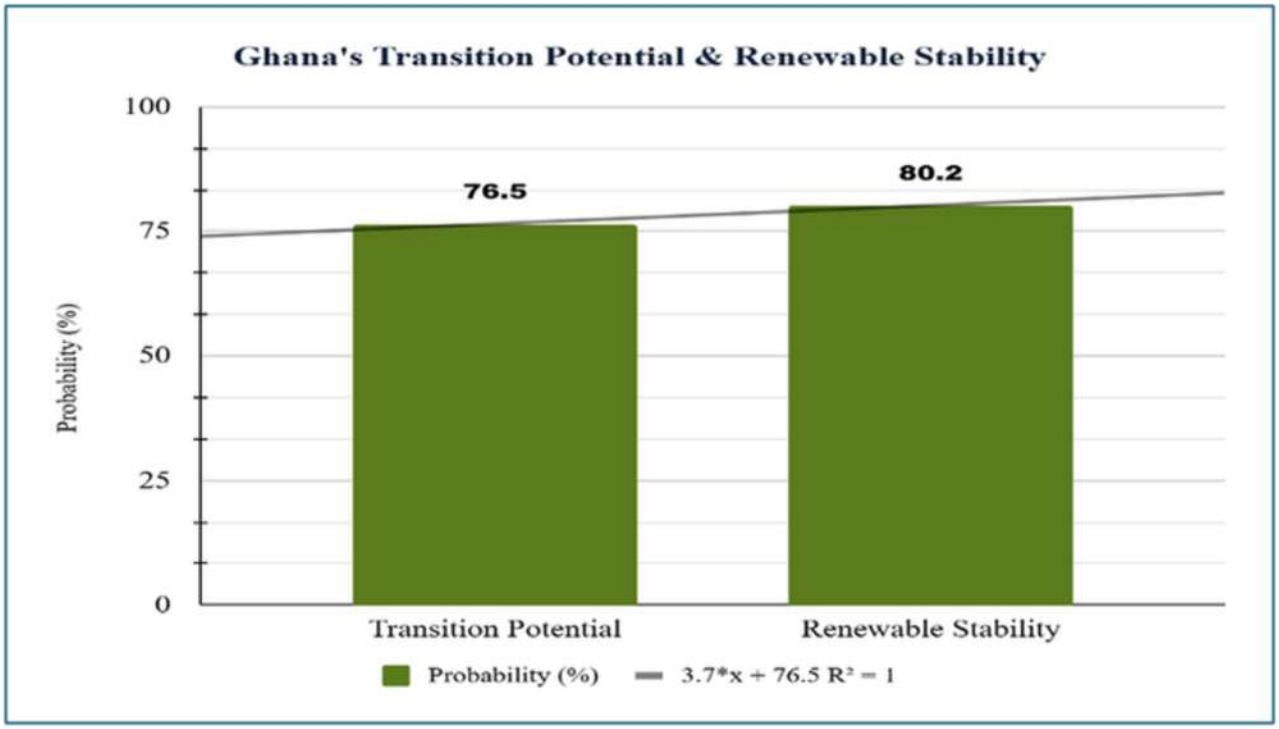


Figure 2: Ghana's transition probability and renewable energy stability
Source: Author's construction based on Ankrah et al. (2023)

4.2 Fossil-Fuel Expansion Crowds Out Renewable Energy

The same evidence carries a warning. A 1% increase in non-renewable energy consumption reduces renewable energy generation by 0.20%. The figure may appear small, but its policy meaning is large. It suggests that fossil-fuel growth can crowd out renewable energy through financing choices, infrastructure planning, institutional habits, and market signals.

This effect is often difficult to detect in real time. A new gas project may appear useful for energy security.

New oil investment may look fiscally attractive. Yet when such choices absorb grid capacity, public guarantees, political attention, and investment incentives, they can slow the rise of cleaner alternatives. Oil dependence, therefore, does not only compete with renewable energy in the market. It also competes inside the policy system. This reinforces the central argument. Petroleum revenues can help finance transition, but unmanaged fossil expansion can delay the same transition those revenues are meant to support.

4.3 FDI and Trade Openness Can Accelerate Clean Energy and Value Creation

The next challenge is to move from procurement gains to deeper industrial capability.

The Ghana case also shows that trade openness and foreign direct investment can support renewable energy growth. But openness alone does not guarantee development. Its impact depends on where capital flows, what investors are required to build, and how strongly domestic firms are linked to new projects. This distinction matters for both energy and minerals policy. Investment that only expands extraction may increase exports without changing the structure of the economy.

By contrast, investment tied to renewable power, grid upgrading, mineral processing, local procurement, and skills development can deepen domestic value creation. Ghana's mining sector already shows the potential of local supply chains, with substantial domestic procurement in goods and services. The next challenge is to move from procurement gains to deeper industrial capability. The lesson is not to reject foreign capital but guide it. Oil-producing and mineral-rich economies need investment frameworks that reward technology transfer, local content, and processing capacity rather than raw extraction alone.

4.4 Critical minerals create opportunity, but raw exports can reproduce dependence

The global shift from hydrocarbons to mineral-intensive technologies gives Africa a strategic opening. Demand for transition minerals is projected to rise sharply, with lithium showing particularly strong growth and other key minerals also expanding as clean-energy systems scale (**See Figure 3**).

Yet the opportunity is uneven. Africa holds major reserves of critical minerals, but processing and refining remain concentrated elsewhere (**See Figure 4**). As a result, many African countries capture the lower-value end of the chain while other regions secure the industrial margins. The pattern is familiar: extract locally, process abroad, and later import the finished technology at a premium.

For oil-producing economies, this is the central danger. The continent could escape crude-oil dependence only to enter a new cycle of unprocessed mineral dependence. Avoiding that outcome requires infrastructure, energy reliability, industrial policy, technical skills, and credible rules that make local value addition commercially viable.

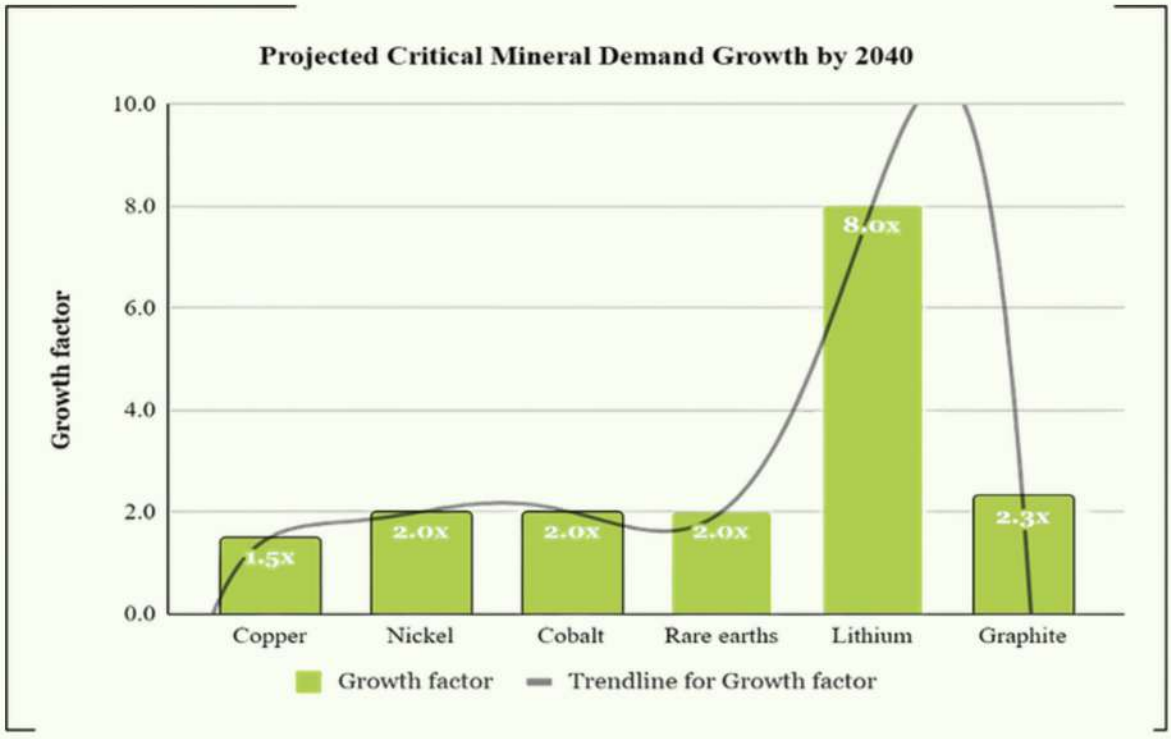


Figure 3: Projected demand growth for selected transition minerals by 2040
Source: Author's construction based on International Energy Agency (2024).

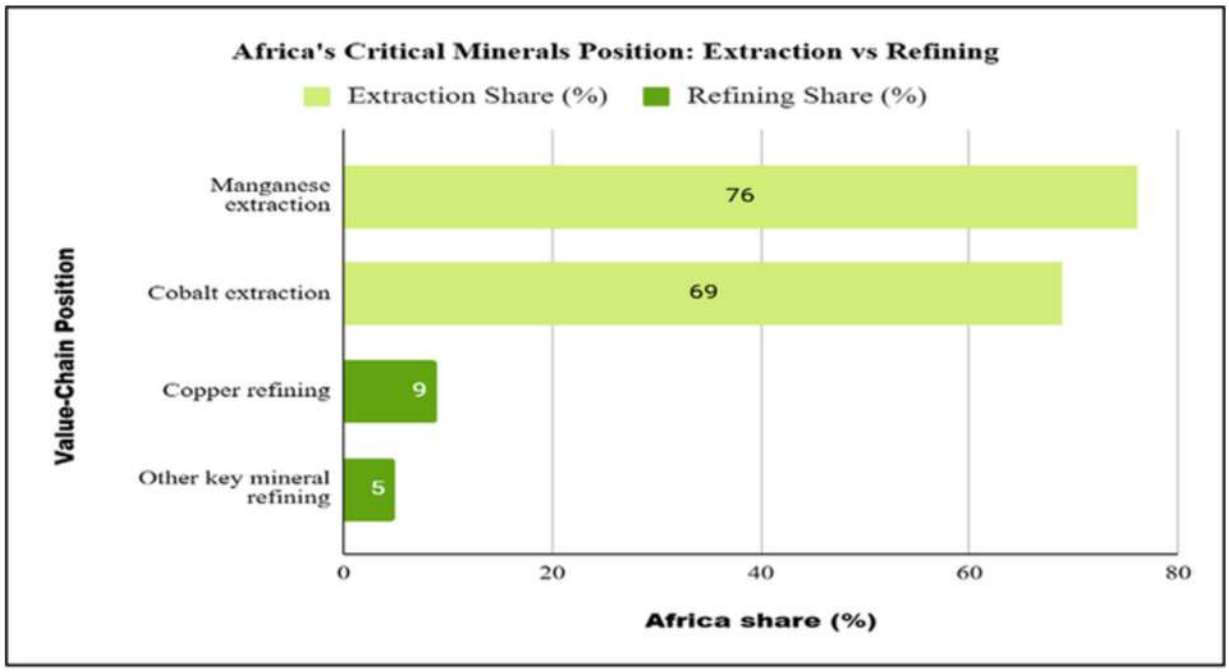


Figure 4: Africa's critical mineral position: strong extraction, limited refining
Source: Author's construction based on International Energy Agency (2024) and Africa Natural Resources Management and Investment Centre (2022).

4.5 Policy Continuity Determines Whether Transition Gains Last

Without continuity, transition becomes episodic.

These insights point to one final condition: transition gains must be sustained. Ghana's transition probability is encouraging, but momentum can fade if policy support weakens. Renewable energy investors read policy signals carefully. When rules change abruptly, tariffs become uncertain, or institutions send mixed messages, projects slow down and capital becomes more cautious.

This is why transition policy must outlive electoral cycles. Oil-producing economies need stable frameworks that connect energy planning, fiscal policy, industrial development, and critical minerals strategy. As Figure 5 illustrates, stronger and more consistent policy support improves the durability of transition momentum, while weak or unstable support makes transition gains more fragile.

Without continuity, transition becomes episodic. It may appear strong in official plans but remain weak in implementation. The broader message is clear. Transition is a institutional process. Governments must build systems that make cleaner energy and value-added mineral development more attractive than another round of fossil or raw-export dependence.

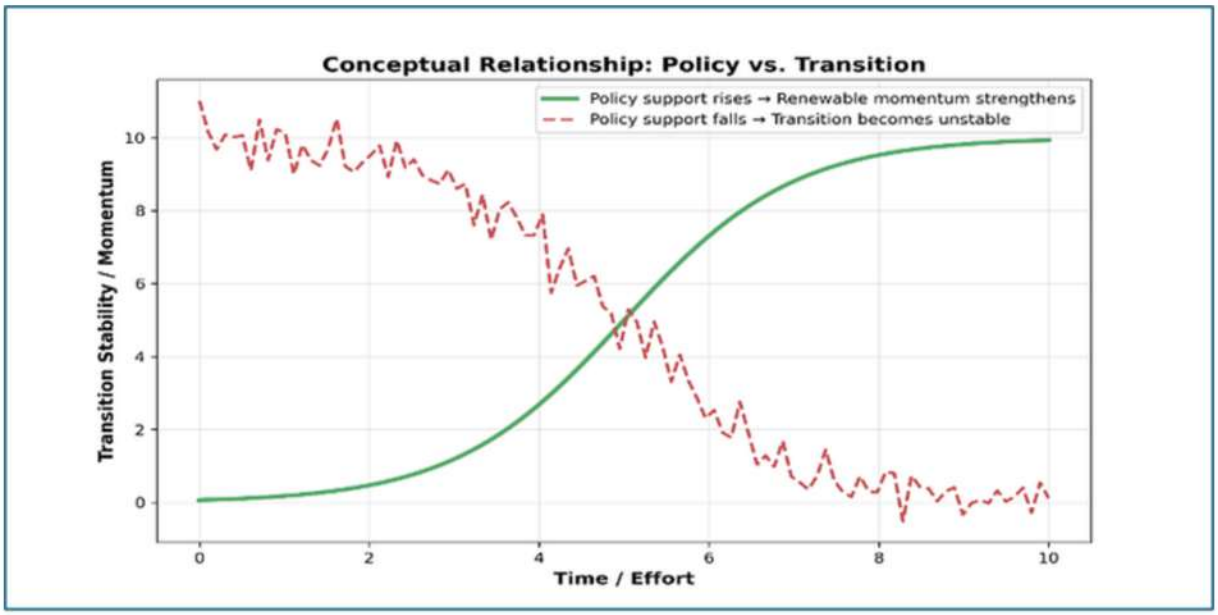


Figure 5: Policy support and transition durability
Source: Author's construction based on Ankrah et al. (2023)

5.0 Policy Options

Oil-producing African economies still need oil revenues to fund public spending, support economic stability, and meet development needs. At the same time, they must prepare for a future in which clean energy and critical minerals play a much larger role in the global economy.

One option is to maintain the current extraction-led model. Under this path, governments continue to prioritise oil production and unprocessed mineral exports while adding renewable energy projects at the margins. This may protect short-term revenue and reassure existing investors, but it leaves economies exposed to future fossil-fuel market risks. It also keeps African countries dependent on external processors and manufacturers for the higher-value parts of the clean-energy economy.

A second option is a rapid fossil-fuel exit. This would mean halting new hydrocarbon projects and moving quickly away from existing production. While this aligns with more ambitious climate goals, it is unlikely to be feasible for most African oil producers in the near term. Many still depend on petroleum revenues for public finance, foreign exchange, and energy security. Without large-scale international support and strong domestic alternatives, a sudden exit could trigger fiscal stress, political resistance, and social backlash.

The third and most viable option is a managed transition linked to industrial diversification. This approach uses oil revenues as a bridge, not a destination. It channels current resource income into renewable power, stronger grids, energy storage, and critical mineral value chains. It also treats mineral processing, local manufacturing, and technology transfer as part of the transition strategy rather than separate industrial ambitions. This brief recommends the third option. A managed transition offers the most practical route for protecting near-term stability while building long-term competitiveness. The task is neither to abandon oil overnight nor to prolong dependence indefinitely. It is to convert finite fossil revenues into durable transition capability.

Table 1. Policy Options at a Glance

Policy path	What it means	Main advantage	Main risk	Policy judgement
Status quo extraction	Continue prioritising oil production and raw mineral exports, while adding renewable projects gradually.	Protects short-term fiscal revenue and investor familiarity.	Deepens exposure to fossil-fuel decline and keeps Africa locked into low-value raw exports.	Not sufficient: It preserves stability today but weakens competitiveness tomorrow.
Rapid fossil-fuel exit	Halt new hydrocarbon projects and move quickly away from existing production.	Aligns strongly with climate ambition.	Could create fiscal stress, energy insecurity, and political backlash without major external support.	Not realistic in the near term: Most oil-producing African economies still need transition buffers.
Managed transition and industrial diversification	Use oil revenues to finance renewable energy, grid expansion, storage, and critical mineral value addition.	Balances present revenue needs with long-term industrial competitiveness.	Requires strong governance, policy discipline, and credible investment frameworks.	Recommended: It turns oil revenues into transition capability and mineral wealth into industrial value.

6.0 Policy Recommendations

The preferred option will not deliver results by declaration alone. A managed transition requires coordinated action from governments, firms, and development partners to convert today's resource revenues into tomorrow's transition capability.

6.1 Governments should turn oil revenues into transition capital.

Oil-producing African economies need clear revenue rules that dedicate a fixed share of petroleum income to renewable energy, grid modernisation, storage, and critical mineral processing. These rules should be backed by stronger renewable energy laws, predictable procurement systems, and mining policies that support in-country processing and technology transfer.

Governments must also invest in the infrastructure and skills that make value addition possible, including reliable power, transport corridors, technical training, and industrial laboratories. To avoid fragmented decision-making, countries should establish transition-focused institutions that connect oil revenue management, energy planning, industrial policy, and mineral governance. Fair contracts, transparent licensing, local content rules, and strong environmental safeguards should sit at the centre of this agenda.

6.2 The private sector should move from extraction to value creation.

Mining, energy, and industrial firms should invest beyond raw production into processing, refining, component manufacturing, grid services, and related supply chains. This shift will require joint ventures, technology partnerships, and long-term offtake agreements that reward local processing and workforce development.

Firms should also build stronger supplier ecosystems by working with domestic small and medium-sized enterprises in logistics, maintenance, engineering, and technical services. Responsible sourcing will become increasingly important as global buyers demand traceable, low-carbon, and socially credible minerals. Companies that adopt strong ESG practices and community benefit arrangements will be better placed to access premium markets, patient capital, and strategic industrial partnerships.

6.3 Development partners and multilateral institutions should help de-risk the transition.

African governments cannot finance the full transition alone, especially where renewable energy, mineral processing, and regional infrastructure require large upfront investment. Development partners should provide concessional finance, guarantees, and blended finance instruments that lower the cost of capital for strategic projects.

They should also support policy harmonisation, contract negotiation, environmental governance, and industrial planning under continental frameworks such as the African Mining Vision and emerging green minerals strategies. Beyond finance, partners should invest in technology transfer, applied research, and regional collaboration. This includes support for cross-border industrial corridors, battery and mineral-processing initiatives, and African-led institutions that can coordinate markets, standards, and knowledge.

Development partners should provide concessional finance, guarantees, and blended finance instruments that lower the cost of capital for strategic projects.

Conclusion

Ghana's evidence sends a clear message. Oil-producing economies are not condemned to fossil dependence. They can move toward renewable energy while still managing existing hydrocarbon resources. But the transition will not unfold by accident. It must be planned, financed, protected, and sustained through institutions that can look beyond the next budget cycle.

This lesson matters far beyond Ghana. Across Africa, the rise of critical minerals presents a rare opening to change the continent's place in the global energy economy. The danger is equally clear. Without value addition, Africa may simply exchange crude oil dependence for raw mineral dependence. The names of the commodities will change, but the structure of vulnerability will remain.

The real task, therefore, is transformation. Oil revenues must become transition capital. Critical minerals must become industrial platforms. Foreign investment must build local capability, not only extract local resources. If African countries treat petroleum as a bridge rather than a crutch, and mineral wealth as a foundation for industry rather than a ticket to quick export earnings, they can claim a stronger position in the clean-energy future.

The window is open, but it will not wait. Africa's next resource story can be another tale of extraction, or it can become a turning point in industrial renewal. Ghana's evidence shows that transition is possible. Policy will decide whether it becomes durable.

Endnotes

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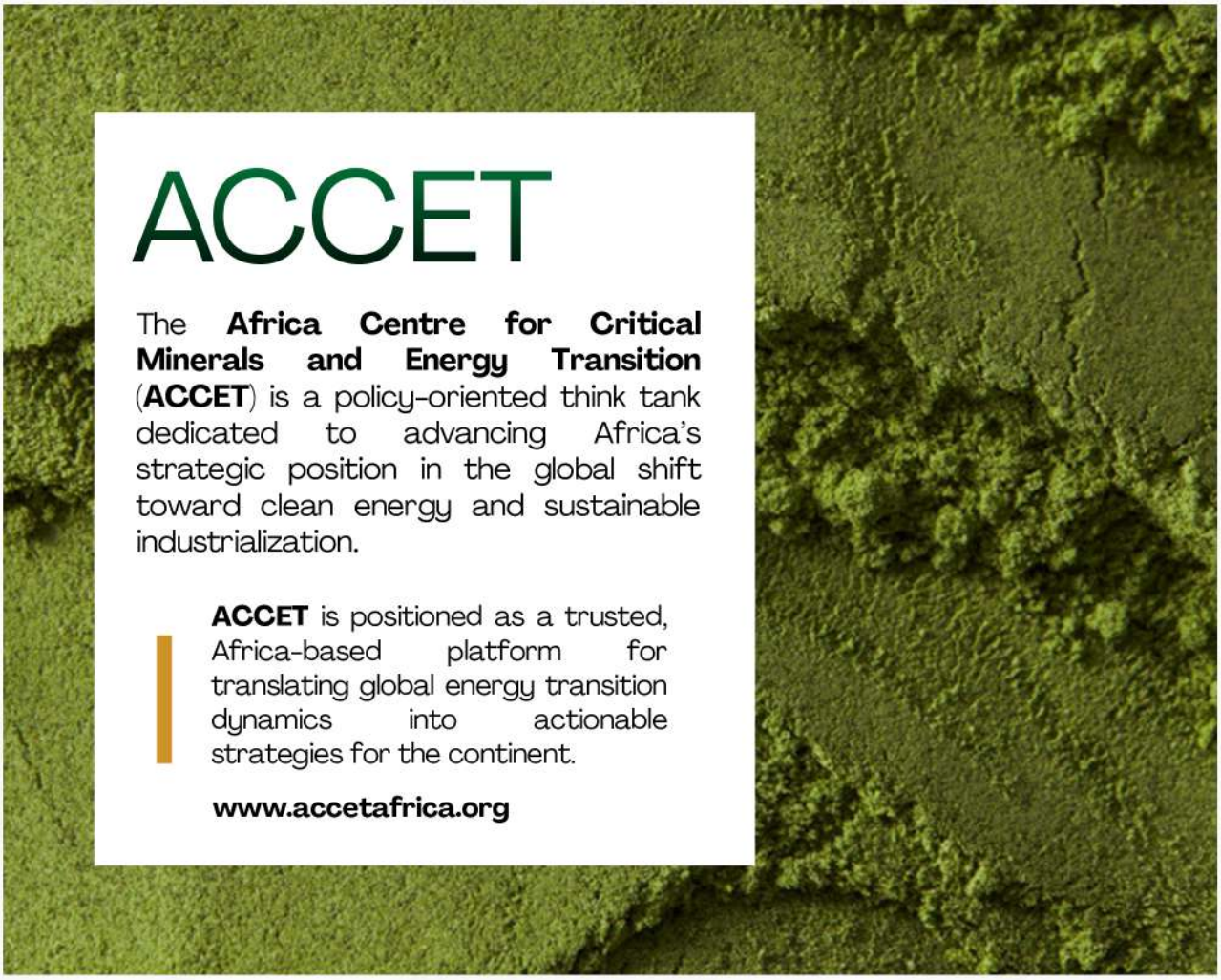

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ACCET is positioned as a trusted, Africa-based platform for translating global energy transition dynamics into actionable strategies for the continent.

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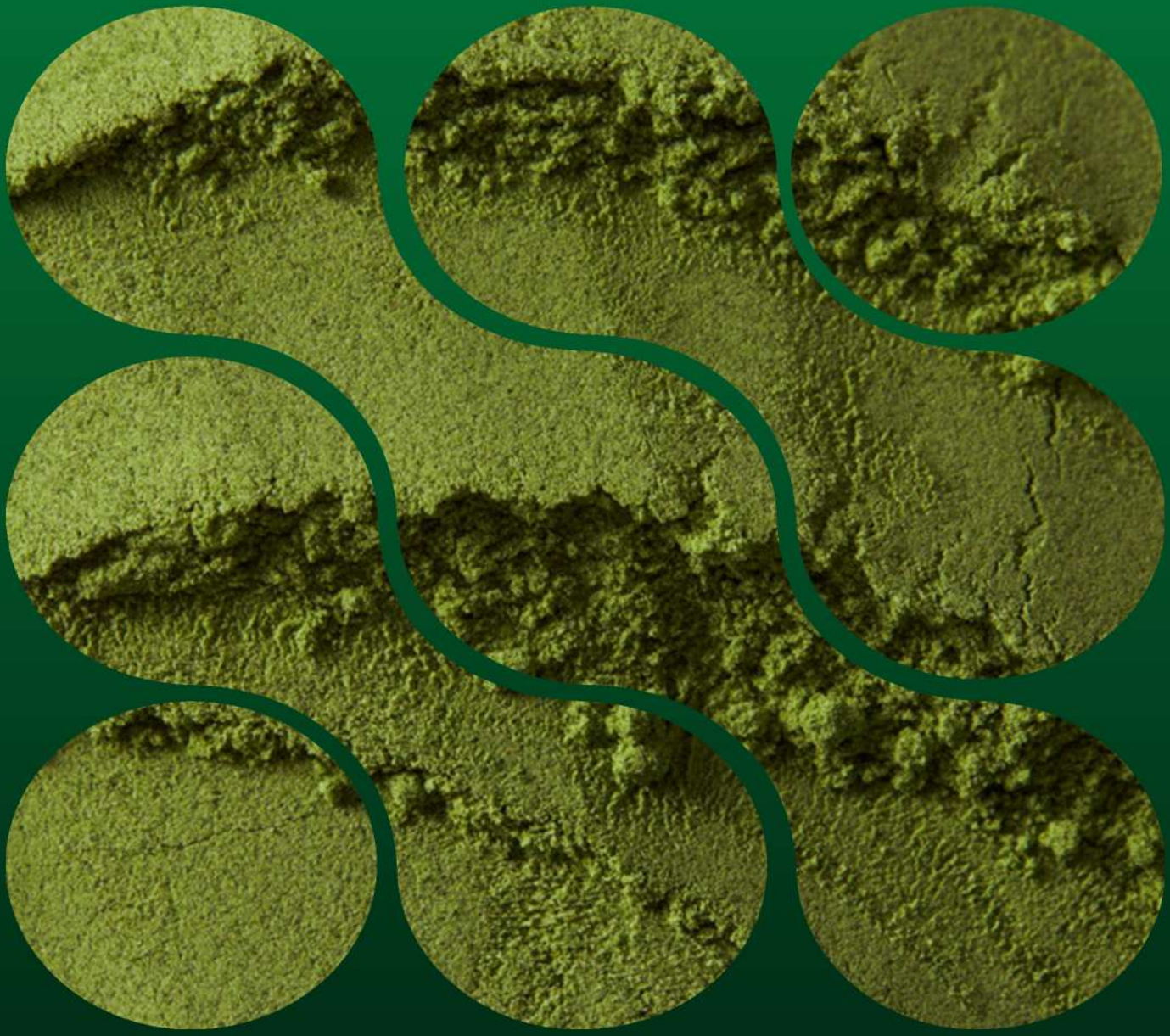

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