East Africa's Potential Role in US Graphite Supply Chains

Cullen S. Hendrix
Peterson Institute for International Economics

Introduction

The impact of the green tech trade war between the United States and China, which began with US semiconductor export controls, is now being felt. China's graphite export controls, announced in October 2023, went into force on December 1. The effects were immediate: Chinese graphite exports to the rest of the world declined by 93.3% (by volume) from the month before. Exports to the United States and Japan – which is collaborating with the United States on semiconductor controls – dropped to zero. While some graphite exports may resume after US- and Japan-based buyers navigate the lengthy process of obtaining export licenses from the Chinese government, US reliance on China for graphite creates supply chain vulnerabilities and affects US net-zero ambitions.

Graphite is a key building block of net-zero energy and transport, used in electric vehicle batteries and motors, solar panels, and nuclear reactors. Global production of graphite will need to increase eight- to 25-fold by 2040 to meet forecasted global demand under the International Energy Agency's state policy and sustainable development scenarios (IEA 2021). China is the world's dominant producer, accounting for 77% of total production in 2023 (USGS 2024), and is largest exporter of flake, spherical (EV battery grade), and synthetic graphite.[1] As of 2022, the United States is the largest importer of graphite, followed by South Korea and Japan.

While China is the largest player, it's not the only one in town when it comes to graphite production. This brief assesses the prospects for three Sub-Saharan African countries – Madagascar, Mozambique, and Tanzania – to provide stable supplies of natural graphite to the US market, considering both domestic factors in the three countries and US policies established by the Inflation Reduction Act (IRA). It finds these countries to have adequate graphite resources and favorable operators headquartered in Western allies. However, there are significant governance-related challenges in Madagascar and Mozambique and some domestic challenges to incorporating East African graphite into US EV supply chains. US critical mineral sourcing policies will need to be modified to facilitate greater involvement of African producers in US graphite supply chains.

[1] Calculations based on 2022 WITS trade data (World Bank 2024a).

Africa's Graphite Producers

Africa's three graphite-rich economies cluster in East Africa. Madagascar and Mozambique are established flake graphite producers with considerable export shares (21% and 24% of 2022 global) by volume. Tanzania is presently a fringe producer but is receiving large inflows of graphite-seeking foreign direct investment.[2] In 2022, Madagascar and Mozambique accounted for 22.4% of US graphite imports by volume and 9.6% by value, trailing only imports from China (48.9% and 74%, respectively).[3]

As sources for US graphite imports, the three have attractive qualities. Combined, their natural graphite reserves (67 million tons) are near par with those of China (78 million) and Brazil (74 million), the two countries with the largest global reserves (USGS 2024).

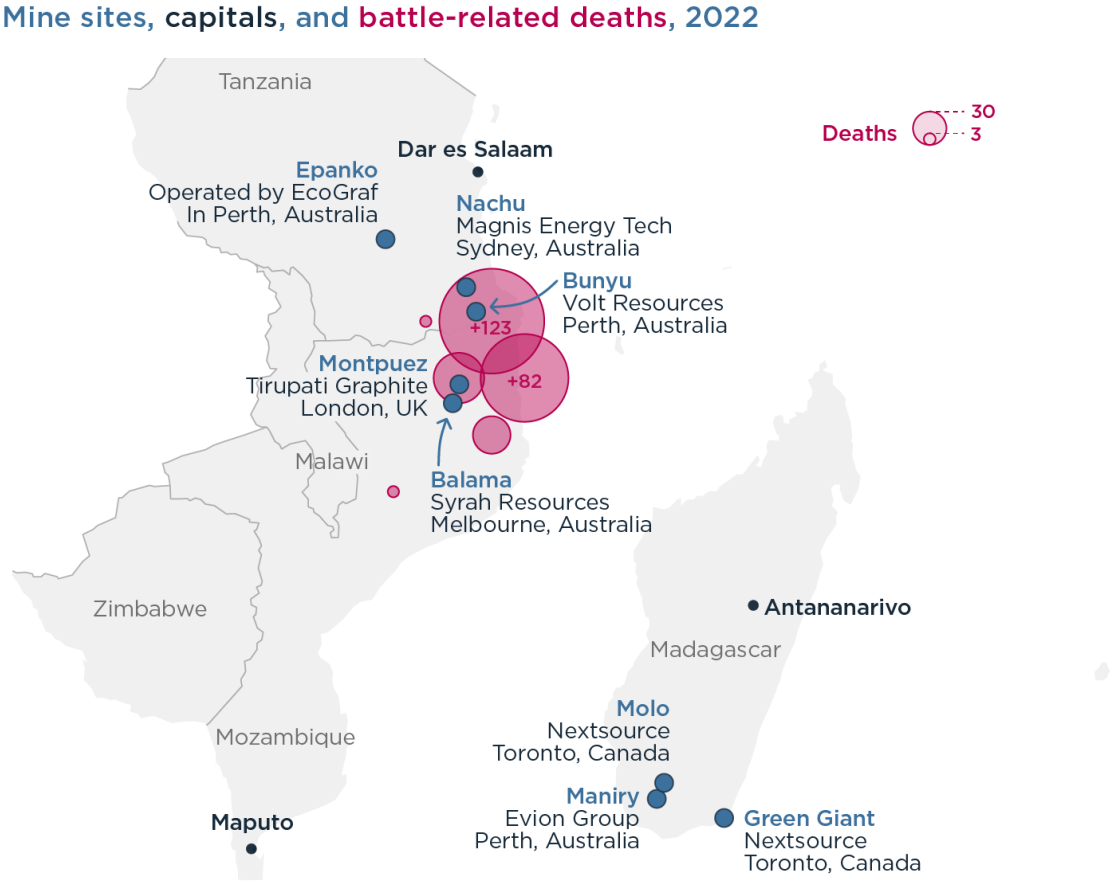


Figure 1: Major East African graphite operations and armed conflict-related battle deaths, 2022. Battle death data are from the Uppsala Armed Conflict Database (most recent year available, 2024).

[2] Marc Howard, "Western players place big bets on East African graphite mines," *African Energy*, November 14, 2022. https://www.africa-energy.com/news-centre/article/western-players-place-big-bets-east-african-graphite-mines.

[3] Author's calculations based on 2022 WITS data (World Bank 2024a).

According to the US State Department, the United States is the largest bilateral donor to Mozambique and Tanzania and among the largest to Madagascar.[4] Recent (2022) surveys in Mozambique and Tanzania indicate majorities (64% and 62.3%) view US influence on their countries as positive.[5] These producers have the material, graphite operations are controlled by strong US allies, and US development assistance policies should in theory (and seemingly in practice) generate good will toward the United States as a strategic partner.

Nevertheless, there are significant challenges. The gap between export volumes and value (22.4% vs. 9.6%) indicates the region's exports are slanted toward lower value-added products like flake and dust and thus need significant additional processing for use in EV batteries. There is room for African producers to move toward higher value-added spherical graphite exports, though the value-added would come at the potential cost of eligibility for IRA-related tax credits (see *Policy Environment and Context – United States*). The more fundamental challenges are governance-related: both Madagascar and Mozambique are comparatively politically unstable, though for different reasons and with different implications for supply stability. In this respect, Tanzania emerges as a comparatively safe partner.

Policy Environment and Context – Producer Countries

US critical mineral policy appears guided by four principles:

1. The United States must lessen its dependence on China as a source of raw materials and refined mineral products.
2. To the extent possible, critical mineral supply chains should be more self-sufficient or based on trade and investment relationships with stable, friendly, like-minded countries.
3. Resulting supply chains should be environmentally and socially sustainable.
4. Private enterprise, subject to inducements and constraints of industrial policy, should lead.

To what extent is graphite sourcing from these East African producers consistent with these principles? Regarding the first, the answer is a qualified "yes". Their most productive mines and largest greenfield projects are operated by Western firms headquartered in countries considered "domestic" producers per the US Defense Production Act, allaying concerns about Chinese firms' roles in production and basic processing (figure 1). The qualification arises from both Mozambique and Madagascar exporting more vastly graphite to China than to the United

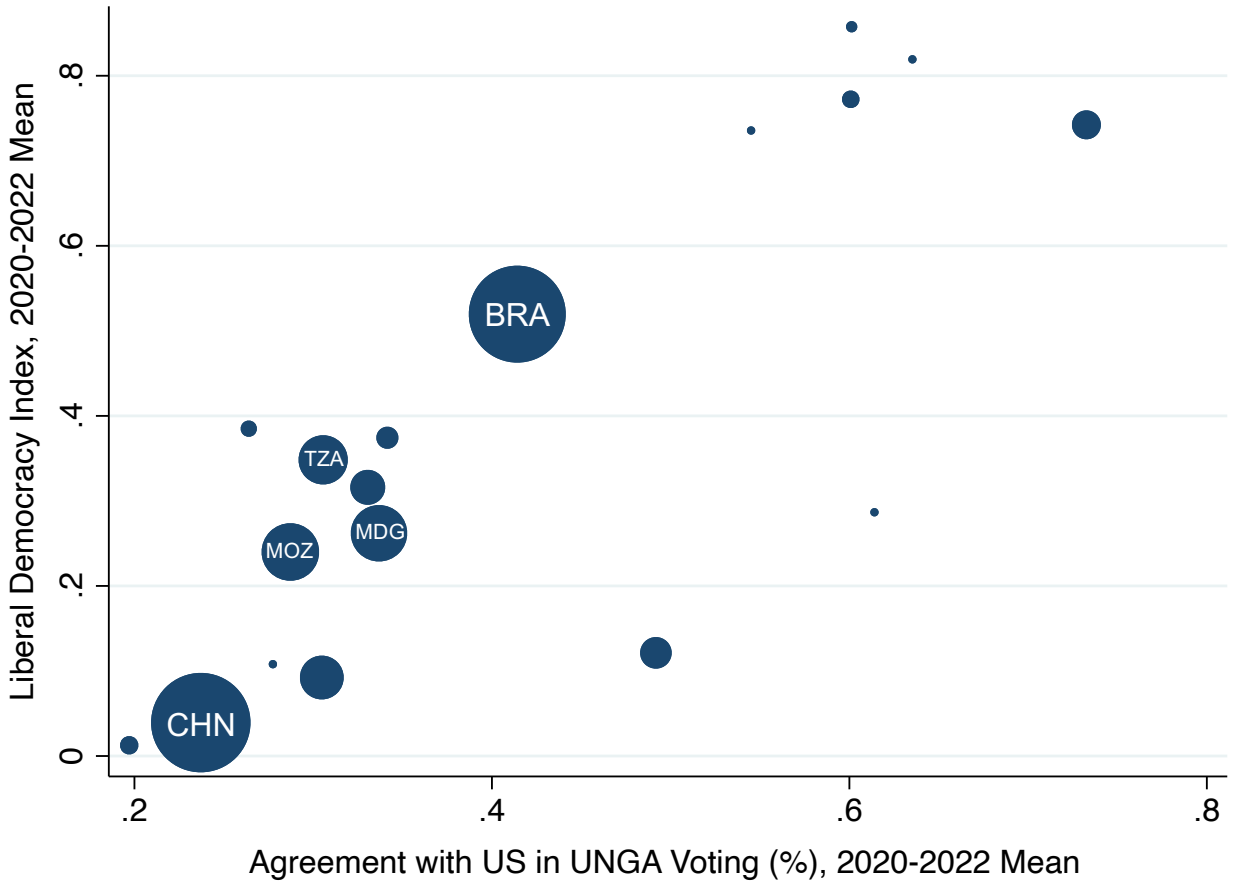
[4] US State Department, "U.S. Relations with Madagascar," "U.S. Relations With Mozambique," "U.S. Relations with Tanzania." https://www.state.gov/u-s-relations-with-madagascar/, https://www.state.gov/u-s-relations-with-mozambique/; https://www.state.gov/u-s-relations-with-tanzania/.

[5] Author's calculations based on Afrobarometer (2023); Madagascar was not included in the 2022 survey.

States as recently as 2022[6], though due to China's world-leading position in flake and powder graphite processing, doing so was a matter of exigence rather than choice.

Regarding the second, the answer is complicated: "like-minded" and "friendly" are amorphous concepts. Like-minded and friendly could mean other liberal democracies, or it could mean countries that agree with US positions on issues of global affairs. Or it could simply mean those countries that share US concerns about rising Chinese influence in Asia and abroad.[7]

For present purposes, I assume "like-minded" and "friendly" are defined according to the first two options: being a liberal democracy and agreeing with the United States on matters of global import. Figure 2 plots countries with significant graphite reserves according to the country's average liberal democracy score (normalized 0-1, higher is more democratic) and the proportion of UN general assembly votes in which the country voted with the United States for the period 2020-2022; markers are sized by total reserves.



[6] Most recent year for which comprehensive data are available.

[7] In 2019, a Hudson Institute report identified the following countries as "like-minded" in the Asia-Pacific beyond those (like Australia, Japan, and Korea) with which the US has formal military alliances: UAE, Saudi Arabia, India, Vietnam, Singapore, Indonesia, and unspecified "others". Satoru Nagao, Patrick M. Cronin, and John Lee, "Strategies for the Indo-Pacific: Perceptions of the U.S. and Like-Minded Countries," *Hudson Institute*, December: https://s3.amazonaws.com/media.hudson.org/Nagao_Indo%20Pacific%20Strategy%20FINAL%20WEB.pdf.

Figure 2: Agreement with the United States in UN General Assembly Voting and Liberal Democracy Scores (2020-2022) for Countries with Significant Graphite Reserves (as of 2023). Data are from the Coppedge et al. (2024), Bailey, Strezhnev, and Voeten (2017), and USGS (2024). BRA = Brazil, CHN = China, MDG =Madagascar, MOZ = Mozambique, TZA = Tanzania.

There is a mismatch between ample graphite reserves and like-mindedness and friendliness with the United States. According to these measures, the three East African graphite producers are more friendly and like-minded than China and North Korea – but not by much. The upper-right quadrant consists of other liberal democracies and US alliance partners: Canada, Germany, Norway, South Korea, and Austria – mostly strong US allies and stable democratic regimes but endowed with comparatively small resources. Brazil, with the second largest proven reserves, is the most democratic and votes most often with the United States in the UNGA among those graphite-abundant countries that could plausibly compete with China as a source of raw material. Because mineral endowments are mostly determined by geology, sourcing decisions are relative beauty contests: partner-country choice is limited by ore availability, and the three East African countries are more friendly and like-minded than China.

What about stability? De-risking implies sourcing from countries where political risk is either low or – if significant – has limited impact on mining, processing, and transport activities and infrastructure. It can be decomposed into two dimensions: the quality and stability of the enabling policy environment and the extent to which political violence or upheaval affects operations. On both dimensions, macro indicators in the three countries, such as the regulatory quality, rule of law, control of corruption, and absence of political violence/terrorism urge caution.

Madagascar and Mozambique score in the bottom quartile of the *Worldwide Governance Indicators* Regulatory Quality, Rule of Law, and Control of Corruption measures, indicating rent-seeking is common and property rights for investors are comparatively weak (figure 2, World Bank 2024b). Tanzania outperforms both countries across these indicators, though it still ranks in the bottom half globally. Included for comparison is Brazil, which outperforms all three on regulatory quality and rule of law but lags behind Tanzania in control of corruption.

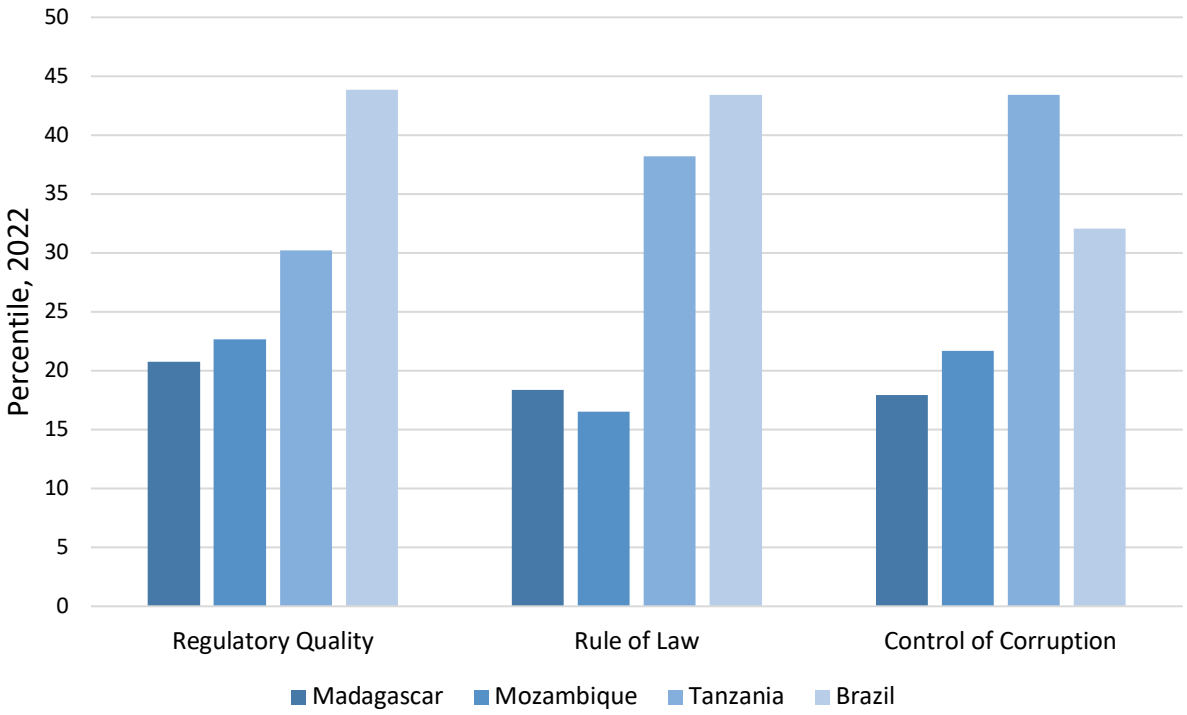


Figure 2: Macro-Institutional Indicators for Madagascar, Mozambique, Tanzania, and Brazil, 2022. Source: World Bank (2024b).

When making strategic sourcing decisions, political stability is paramount. They affect the ability to ensure stability of supply, build supporting energy and transportation infrastructure, mitigate, and/or remediate environmental impacts (Collier et al. 2003, Azadegan and Dooley 2021). All three East African countries are below global medians for the World Bank's Political Stability/Absence of Violence indicator, which captures "perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism" (World Bank 2024b, figure 3). Over the period 2010-2022, no country saw a greater deterioration in political stability than Mozambique.

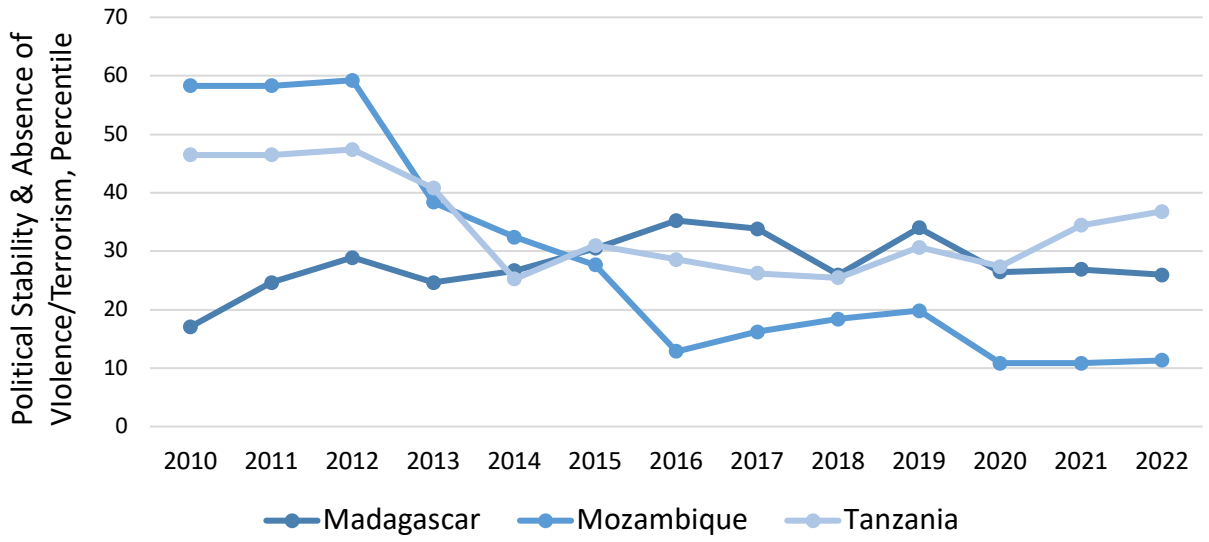


Figure 3: Political Stability and Absence of Violence/Terrorism, 2010-2022. While all three countries ranked in the bottom half of the distribution in 2022, the security situation in Mozambique is more tenuous than that in either Madagascar or Tanzania owing to the ongoing Islamic State – Mozambique rebellion in the graphite-rich Cabo Delgado province. Source: World Bank (2024).

Another way of conceptualizing political stability is to focus on regime volatility, or the degree to which political institutions and norms are stable irrespective of regime "type." Table 1 reports the mean, standard deviation, and coefficient of variation[8] for the three countries for the period 2010-2022. Tanzania emerges as both the most democratic and stable over the period, with Madagascar ranking last according to both measures (lowest mean, highest coefficient of variance). Synthesizing across both the regime stability/absence of violence and regime volatility measures, Tanzania emerges as the most politically stable. Mozambique combines relative central government stability with high levels of political violence – which is accurate given the highly regionalized nature of political violence in the country (see below). While relatively peaceful, politics in Madagascar are highly unpredictable.

Table 1: Regime Volatility for Three East African Graphite Producers, 2010-2022

	Madagascar	Mozambique	Tanzania
Lib. Democracy (Mean)	0.207	0.277	0.373
Lib. Democracy (Std. Dev.)	0.071	0.031	0.030
Lib. Democracy (Coef. Of Variation)	0.342	0.111	0.080

Source: Coppedge et al. (2024), author's calculations.

[8] The ratio of the standard deviation to the mean; higher values indicate greater dispersion of scores around the mean.

Madagascar

Madagascar was governed by one of many former socialist regimes that liberalized rapidly at the end of the Cold War. After nearly a decade of post-transition stability, Madagascar experienced significant violence around the presidential elections of 2002. Didier Ratsiraka, who had already been president served four presidential terms (appointed and re-elected[9] twice 1975-1993, elected 1997-2002), was challenged by Marc Ravalomanana, then mayor of the capital, Antananarivo.

Despite a campaign with significant restrictions on opposition parties and other incumbent-favoring rules, Ravalomanana performed much better than expected, with exit polling and independent election monitors strongly favoring Ravalomanana as the outright winner. After a contested recount was certified and a second-round runoff between Ratsiraka and Ravalomanana was announced, Ravalomanana supporters announced a general strike in major urban centers where Ravalomanana had his strongest bases of support. In response, Ratsiraka supporters effectively blockaded major cities and towns from receiving food or fuel supplies; this period was characterized by violent riots between rival political factions resulting in nearly 100 deaths over three months (UCDP 2024). Ultimately, Ravalomanana was declared the winner and assumed office.

Ravalomanana would be re-elected in 2006 and remain in office until 2009. In January of that year, clashes erupted began between Ravalomanana supporters and those of Andry Rajoelina, then mayor of Antananarivo. This political crisis would be deeper, ultimately resulting not just in Ravalomanana's ouster but also a brief period under military rule, after which Raoelina was declared the new president by the military government in what was widely viewed as a *coup d'état*. After a three-year exile in South Africa, Ravalomana would return to run for president (unsuccessfully) twice in 2018 and 2023. During this period, however, there were no significant disruptions to graphite mining activities; economic and disruptions related to this instability were most acute in Antananarivo and other major cities.

Mozambique

Mozambique emerged from the Cold War as one of the most deeply conflict-affected countries. From 1977-1992, the civil war between the *Frente de Libertação de Moçambique (FRELIMO)* and the Rhodesian and *apartheid* South African-backed *Resistência Nacional Moçambicana (RENAMO)* claimed hundreds of thousands of lives and displaced millions. By 2016, however, Mozambique had experienced 24 years of relative stability and prosperity, with the economy growing at an average 7.8% per year.[10]

Since 2017, Mozambique's Cabo Delgado region – which contains Mozambique's graphite resources, as well as vast reserves of rubies and offshore natural gas – has been the site of a

[9] In elections that were neither free nor fair.
[10] Author's calculations based on World Bank (2024b).

vicious insurgency waged by a local franchise of the Islamic State (ISM, see battle deaths in Figure 1).[11] Violence spiked in 2020, by which point ISM had assaulted several district governments, captured Mocimboa da Praia, Cabo Delgado's second-largest city and a major trading and export hub, and conducted sustained attacks against Palma, a nearby city where multinationals led by Total, S.A. had planned $20 billion in investments to develop the region's offshore gas deposits.[12]

After Total declared *force majeur*, imperiling the LNG project, the South African Development Community (SADC) and Rwanda intervened against ISM on the Mozambican government's behalf. Rwandan and Mozambican forces retook Mocimboa da Praia by August 2021, and by late 2022 ISM had been pushed from coastal cities and towns. They dispersed into the district's interior, and shifted tactics to using smaller, more mobile units in the face of superior Rwandan and SADC forces; this led to attacks on or near graphite mining operations.[13] In June 2022, roadside attacks by ISM militants led Syrah to temporarily suspend logistics and personnel movements at its Balama mine, though mining and processing activities were unaffected.[14] Operations were temporarily suspended again and staff evacuated in November due to nearby violence.[15]

Overall attacks and civilian targeting decreased substantially in 2023. The group is still active, having attacked southern Cabo Delgado and launched incursions into neighboring Nampula province in February and March.[16] Moving forward, it is unlikely ISM will regain control of Mocimboa da Praia or Palma. The economic stakes of the region's natural gas deposits are too high, and the area too easily defended: the natural gas is offshore, and ISM lacks the capacity for maritime attacks or to prevent amphibious reinforcement of government-aligned forces.[17] Graphite operations in the near interior will benefit from positive security spillovers over time – but the Cabo Delgado region remains highly contested.

ISM attacks are not the only source of supply instability. The Balama mine halted all operations and evacuated personnel in September/October 2022 due to a strike by workers and

[11] At the outset of the conflict, the group was known as Ahlu al-Sunna wa'l Jama'a (ASWJ); it became affiliated with the transnational Islamic State movement in 2019.
[12] Ashoka Mukpo, "Gas fields and jihad: Mozambique's Cabo Delgado becomes a resource-rich war zone," Mongabay, April 26, 2021. https://news.mongabay.com/2021/04/gas-fields-and-jihad-mozambiques-cabo-delgado-becomes-a-resource-rich-war-zone/.
[13] Peter Bofin, "Actor Profile: Islamic State Mozambique (ISM)," *Armed Conflict Location & Event Data Project*, October 30, 2023. https://acleddata.com/2023/10/30/actor-profile-islamic-state-mozambique-ism/.
[14] "Syrah Resources suspends movement on key route after attacks in northern Mozambique," *Reuters*, June 8, 2022. https://www.reuters.com/article/idUSKBN2NQ058/.
[15] "Cabo Delgado: Syrah Resources Resumes Operations at its Graphite Mine After Attacks Last Week," *Mozambique 360,* November 15, 2022. https://360mozambique.com/business/mining/cabo-delgado-syrah-resources-resumes-operations-at-its-graphite-mine-after-attacks-last-week/.
[16] Tom Gould and Gerald Imray, "New attacks by IS-linked group in Mozambique leave over 70 children missing. Thousands have fled," *Associated Press*, March 6, 2024. https://apnews.com/article/mozambique-islamic-state-attacks-children-cabo-delgado-8ae87372d6f23b7484798ff36e31aa52.
[17] "Mozambican Navy Receives New Patrol Boat," *African Defense Forum*, February 7, 2023. https://adf-magazine.com/2023/02/mozambican-navy-receives-new-patrol-boat/.

contractors. Subsequently, management and workers arrived at consensus, allowing production to resume by mid-October.[18]

Tanzania

Tanzania has been the most politically stable of the three countries and among the most politically stable in East Africa since independence. The *Chama Cha Mapinduzi* party and its predecessor[19] have been in power since independence. The current president, Samia Suluhu Hassan, is the latest sixth to hold office, having ascended to the presidency after John Magufuli's death, reportedly due to COVID, in 2021. Elections have not met international standards for freedom and fairness, but transfers of presidential power have been largely peaceful. However, there were fifty deaths related to election violence between 1989 and 2017.[20] Most deaths occurred on the islands of Pemba and Zanzibar, far from Dar es Salaam and Tanzania's graphite-producing central and southeastern regions (Fjelde and Höglund 2022).

Explanations for this relative stability and comparative peacefulness range from the inclusive, nation-building governing approach of Julius Nyerere (Miguel 2004) and the absence of large ethnic groups around which to mobilize political competition and facilitating inter-ethnic coalitions (Lieberman and Singh 2012).

Recently, southern Tanzania has been affected by conflict spillover from Cabo Delgado. ISM launched attacks on both sides of the border in 2020 and 2021, and ISM has recruited in Tanzania around grievances similar to some of those animating the insurgency in Mozambique: natural resource wealth. Southern Tanzania also has significant offshore deposits of natural gas, and the gap among local residents between expectations of resource wealth and actual economic performance – and the perceived fairness of government policies – are animating some anti-regime sentiment (Must and Rustad 2019). ISM attacks spiked in 2020 and 2021 but have waned as the group has been significantly deteriorated by Tanzanian forces and coalition operations in Mozambique (see previous section). There have been no clear reports of ISM attacks disrupting graphite mining operations in Tanzania.

Given these brief case histories, the competing risks are clear: Mozambique offers a more stable central policymaking environment, but its graphite-exporting region experiences high levels of political risk. Madagascar's graphite resources are less subject to direct risk, but central government authority and stability are more questionable. Tanzania emerges as the most stable and predictable policy environment by default.

---

[18] Loyce Zemeyi, "Syrah Resources' month-long strike comes to an end," Mozambique Mining Journal, October 14, 2022. https://mozambiqueminingjournal.com/syrah-resources-month-long-strike-comes-to-an-end/.

[19] Between 1962 and 1977, Tanzania was ruled by the Tanganyika African National Union (TANU). *Chama Cha Mapinduzi* was formed in 1977 when TANU merged with the Afro-Shirazi Party, the dominant party on the island of Zanzibar.

[20] Last year for which data are available.

Policy Environment and Context – United States

Sourcing graphite from these East African producers faces several basic challenges stemming from the policy environment in the United States. US industrial policy around EVs – embodied by the IRA – creates strong preference for domestic sourcing or sourcing from US free trade agreement (FTA) partners. The $7,500 purchase/lease tax credit available for EVs is actually two tax credits: one ($3,750) for battery components that must be assembled in North America, one ($3,750) for critical minerals that must be mined or processed in the United States or an FTA partner; both have progressively increasing content requirements (100% by 2029 for battery components, 80% by 2027 for minerals).

None of the three East African economies are US FTA partners. All three are eligible for preferential US market access under the African Growth and Opportunity Act (AGOA), but AGOA is not a free trade agreement. FTAs are reciprocal agreements where each involved party lowers trade barriers to enhance trade between them. With AGOA, the US reduced trade barriers on more than 5,000 products from designated African states while not requiring these economies to reduce barriers to US goods. For the purposes of the IRA, Malagasy, Mozambican, and Tanzanian graphite exports would only be eligible were they processed in the United States, hindering opportunities for these countries to move into more lucrative and industrial development-supporting processing activities (Hendrix 2022).

Here, Mozambican graphite would appear to have an advantage, as its most productive mine (Balama) is owned by Syrah Resources, which also owns and operates the US Department of Energy-financed[21] Vidalia Active Anode Material Facility in Vidalia, Louisiana. In February 2024, it became the first US-based facility to process active anode material, allowing Syrah to claim being the only vertically integrated natural graphite and battery anode company whose full supply chain operates outside the People's Republic of China.[22] While other producers have established offtake agreements with European and Indian firms, at present Syrah appears to be the only regional player positioned to take full advantage of IRA incentives in the short term.

Conclusions

This brief assessed prospects for three East African economies – Madagascar, Mozambique, and Tanzania – as stable sources of supply for US natural graphite needs. These countries have significant graphite resources, graphite operations are controlled by Western firms headquartered in US allies, and public sentiment toward the United States as a strategic partner is not negative. Whether these countries are "like-minded" and "friendly" vis-à-vis the United States is a more open question – perhaps relative to China, but not in the absolute sense. Among the three, Tanzania emerges as the most politically stable and least subject to

[21] "Syrah Vidalia," Department of Energy Loans Office, N.d. https://www.energy.gov/lpo/syrah-vidalia.
[22] "Syrah starts active anode material production in Louisiana," *Mining.com*, February 9, 2024. https://www.mining.com/syrah-starts-active-anode-material-production-in-louisiana/.

political risk related to either armed conflict or regime instability. Of course, it is also a frontier producer with a comparatively limited track record.

The brief also identifies sourcing requirements in the IRA as a stumbling block to greater East African participation in US EV supply chains. This challenge could be addressed several different ways:

- The United States Trade Representative (USTR) could attempt to simply reclassify AGOA as an FTA. While theoretically possible, this path is likely a nonstarter.
- The USTR could use AGOA as a foundation for initiating negotiations on either a multilateral, critical minerals-specific executive agreement – similar to the agreement in force with Japan – or a series of bilateral agreements with particular mineral-rich economies.
- Congress could use reauthorize AGOA – which is set to expire in 2025 – with specific language designating it a free trade agreement for critical mineral-related purposes.[23]

Each of these paths forward faces political challenges, especially entering an election season. However, the stark impact of Chinese export controls on graphite – which came into relief earlier this year – may foster more bipartisan cooperation and consensus around graphite and other critical mineral sourcing.

[23] Recommendations are adapted from Cullen S. Hendrix, "Trade Accords with Sub-Saharan African Countries Can Ease Supplies of Critical Minerals," *PIIE Realtime Economics,* October 13, 2023. https://www.piie.com/blogs/realtime-economics/trade-accords-sub-saharan-african-countries-can-ease-supplies-critical.

References

Afrobarometer. 2023. Round 8 Data (34 Countries), 2022. https://www.afrobarometer.org/survey-resource/merged-round-8-data-34-countries-2022/.

Azadegan, Arash, and Kevin Dooley. 2021. A Typology of Supply Network Resilience Strategies: Complex Collaborations in a Complex World. *Journal of Supply Chain Management* 57 (1): 17-26.

Bailey, Michael A., Anton Strezhnev, and Erik Voeten. 2017. Estimating Dynamic State Preferences from United Nations Voting Data. *Journal of Conflict Resolution* 61 (2): 430-456.

Collier, Paul, V.L. Elliott, Håvard Hegre, Anke Hoeffler, Marta Reynal-Querol, and Nicholas Sambanis. 2003. *Breaking the Conflict Trap: Civil War and Development Policy*. Washington: World Bank.

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Fabio Angiolillo et al. 2024. V-Dem Codebook v14. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4774440.

Hendrix, Cullen S. 2022. Building Downstream Capacity for Critical Minerals in Africa: Challenges and Opportunities. *PIIE Policy Brief* 22-16. Washington: PIIE.

International Energy Agency (IEA). 2021. The Role of Critical Minerals in Clean Energy Transitions. *International Energy Agency*. Paris: IEA.

Lieberman, Evan S., and Prema Singh. 2012. The Institutional Origins of Ethnic Violence. *Comparative Politics* 45 (1): 1-24.

Miguel, Edward. 2004. Tribe or Nation? Nation Building and Public Goods Provision in Kenya versus Tanzania. *World Politics* 56 (3): 327-362.

Must, Elise, and Siri Aas Rustad. 2019. "Mtwara Will Be the New Dubai": Dashed Expectations, Grievances, and Civil Unrest in Tanzania. *International Interactions* 45 (3): 500-531.

United States Geological Service (USGS). 2024. Mineral Commodity Summaries: Graphite. https://pubs.usgs.gov/publication/mcs2024.

Uppsala Conflict Data Project (UCDP). 2024. Georeferenced Event Dataset (v.23.1). https://ucdp.uu.se/downloads/index.html#ged_global.

World Bank. 2024a. World Integrated Trade Solution (WITS). https://wits.worldbank.org/trade/comtrade/en/country/ALL/year/2022/tradeflow/Exports/partner/WLD/product/250410.

World Bank. 2024b. Worldwide Governance Indicators. https://www.worldbank.org/en/publication/worldwide-governance-indicators.

World Bank. 2024c. World Development Indicators. https://databank.worldbank.org/source/world-development-indicators.