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For Liberia, Industrialization Will Be Measured in Megawatts

When you have the will, but lack the power.

Summary

Industrial policy can only succeed with both sustained political commitment and abundant, reliable energy. Liberia has the political will but needs to resolve its power question. A new injection of grant funds from the Millennium Challenge Corporation is an opportunity to link Liberia's industrialization ambitions in rubber and iron ore with meaningful, timely, debt-free investments in Liberia's power sector. The Government of Liberia should use this grant funding where it is most needed — transmission and utility reform — to leverage additional generation, whether through private investment or the West African Power Pool. This critical confluence can kickstart Liberia's economic growth and job creation, if it can take advantage of the moment.

Liberia Has Sustained Political Commitment Over Multiple Administrations

To effectively execute on industrial policy, a country needs many things. This memo focuses on two of the most important: sustained political commitment and abundant, reliable energy. Liberia offers an instructive case study of when you have the will but lack the power.

Over the past two administrations, Liberia has demonstrated an unusual degree of political continuity around industrial policy. Former President George Weah's Executive Order 124 prohibited the export of unprocessed natural rubber. Current President Joseph Boakai subsequently extended the policy through Executive Order 151. Across party lines, the government has maintained a consistent objective: move Liberia away from raw commodity exports and toward domestic processing and value addition, starting with rubber (Liberia's largest export crop). That consensus solves one of the most difficult problems in industrial development — political continuity and predictability. The next challenge is more practical: whether Liberia's energy system can support the industrialization the nation seeks.

Industrialization Is Built on Abundant, Reliable Energy

Governments often discuss industrialization in terms of sectors: agriculture, mining, manufacturing, or exports. Yet every industrial transformation ultimately depends on energy. Each successive step along a value chain requires additional — and more reliable — power. The

transition from raw material exports to processed exports is therefore an energy decision. While export bans, local content requirements, and beneficiation policies can create incentives for domestic processing, they cannot substitute for reliable electricity. Liberia's experience in the rubber sector illustrates this reality.

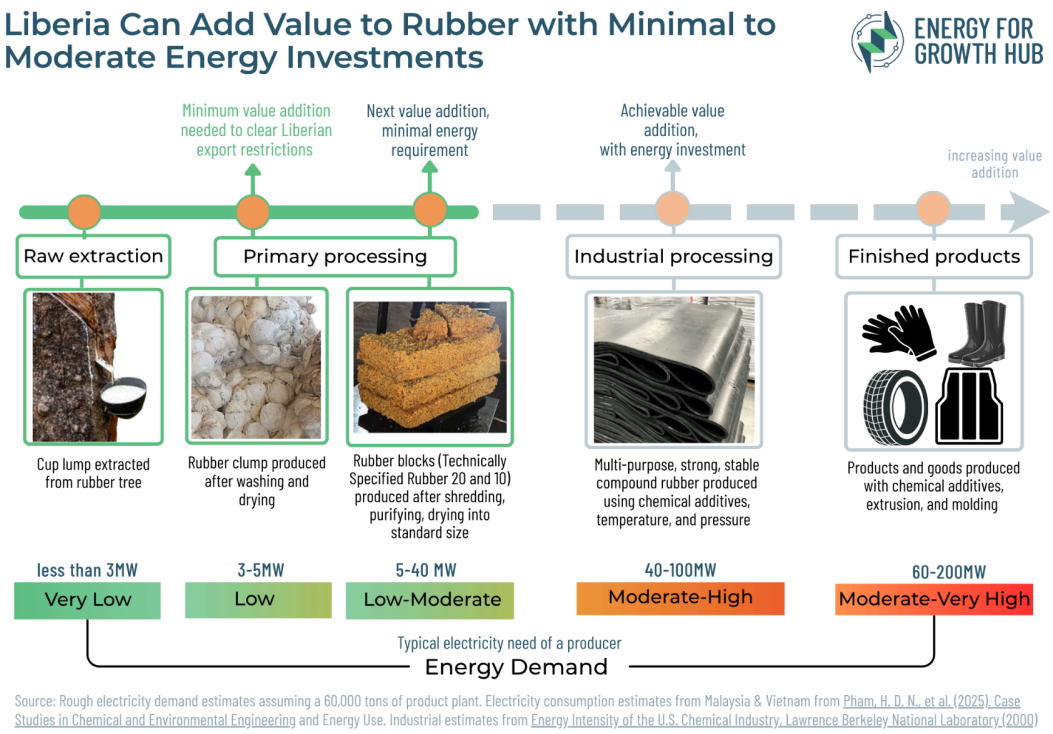
Rubber Value Addition Is a Low-Energy Test of Liberia's Industrial Policy

Liberia is a significant natural rubber producer, ranking second in natural rubber exports among African countries. Rubber earned Liberia $115 million in exports in 2025, the fourth highest-earning export after minerals, gold, and iron ore. Historically, much of this production left the country as unprocessed rubber (cup lump). The government's export moratorium seeks to change this by encouraging domestic processing into Technically Specified Rubber (TSR20). TSR20 is the most basic industrial product derived from natural rubber. While it represents genuine value addition, it remains near the beginning of the value chain.

The commercial case for the moratorium is relatively strong. For the same 73,769 tons of rubber (Liberia's total 2025 rubber exports), Liberia would receive roughly $64 million for unprocessed cup lump exports versus $111 million for TSR20 exports.[1] And this increased revenue does not include the additional industrial jobs created by processing. While this comparison does not account for processing costs, energy, labor, logistics, financing, and factory margins, it illustrates the magnitude of value that can be retained domestically through even basic processing. Notably, the economic case for the moratorium strengthens when commodity prices are depressed, which is often precisely when governments face the greatest political pressure to abandon such policies.

TSR20 is nonetheless an on-ramp, not a destination. The industrial logic of the moratorium depends entirely on whether it catalyzes movement further up the value chain into higher-grade rubber, compound rubber, and eventually finished products. That movement is fundamentally an energy question.

[1] Unprocessed cup lump prices based on September 2026 prices issued by the Liberia National Rubber Pricing Committee under the MInistry of Agriculture. TSR20 prices based on the SICOM TSR20 Futures Index using September 2026 prices.

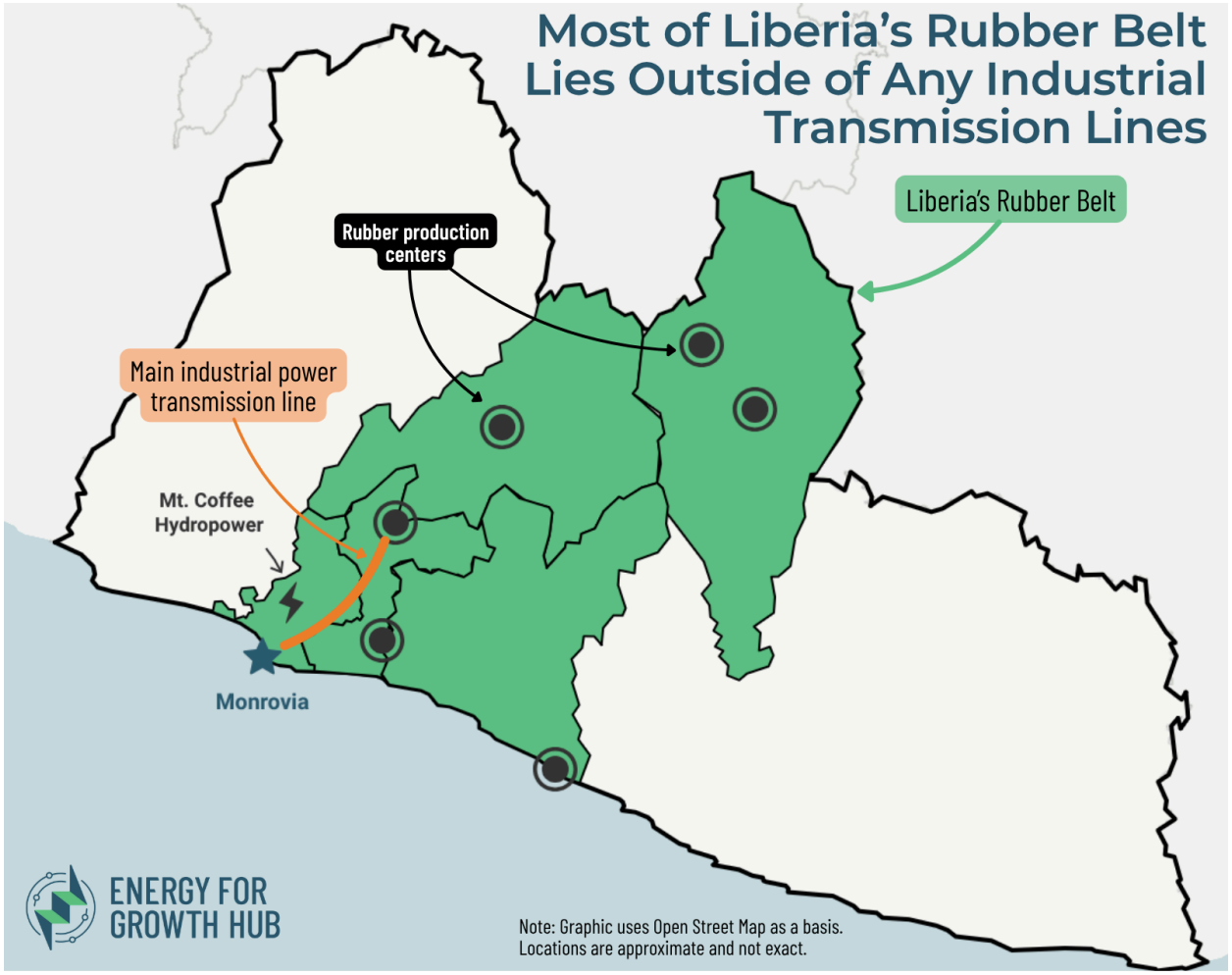


Source: Rough electricity demand estimates assuming a 60,000 tons of product plant. Electricity consumption estimates from Malaysia & Vietnam from Pham, H. D. N., et al. (2025). Case Studies in Chemical and Environmental Engineering and Energy Use. Industrial estimates from Energy Intensity of the U.S. Chemical Industry, Lawrence Berkeley National Laboratory (2000).

TSR20 processing is not particularly energy intensive, and its requirements are well within the capabilities of a modest industrial power system. This low bar is precisely why it should serve as the floor of Liberia's industrial policy as it moves up the rubber value chain. TSR10, for example, is produced using the same process as TSR20, but earns a premium. The difference is principally in impurities allowed in the cup lump, placing the upgrade on input quality not new processing capacity. The government could thus target producing and exporting more TSR10 and achieve this by providing support to farmers and aggregators to improve how cup lump is collected and handled to meet TSR10 standards. From there, the policy could also realistically target producing compound rubber in five years and finished products — boots, car mats, etc. — in 10. The private sector is already signaling an appetite for this with Weala Rubber considering producing tires.

Yet even though the energy demands of producing TSR20 are minimal, Liberia's energy sector remains incapable of providing affordable and reliable power to processors. Nimba Rubber, a Liberian-owned processor, puts its total energy demand at 3 megawatts (MW) to convert 60,000 tons of cup lump to TSR20 per year. A significant segment of the "Rubber Belt" lies outside the reach of any transmission lines, putting some of the largest rubber farms, aggregators, and processors entirely outside the grid. Weala Rubber — the company considering producing tires — while connected to the grid, relies on captive generation through 6 MW of heavy fuel oil generators. For processors closer to Ganta (the second largest

city), total installed capacity is 5 MW. There is not enough power to cover industrial and residential customers.



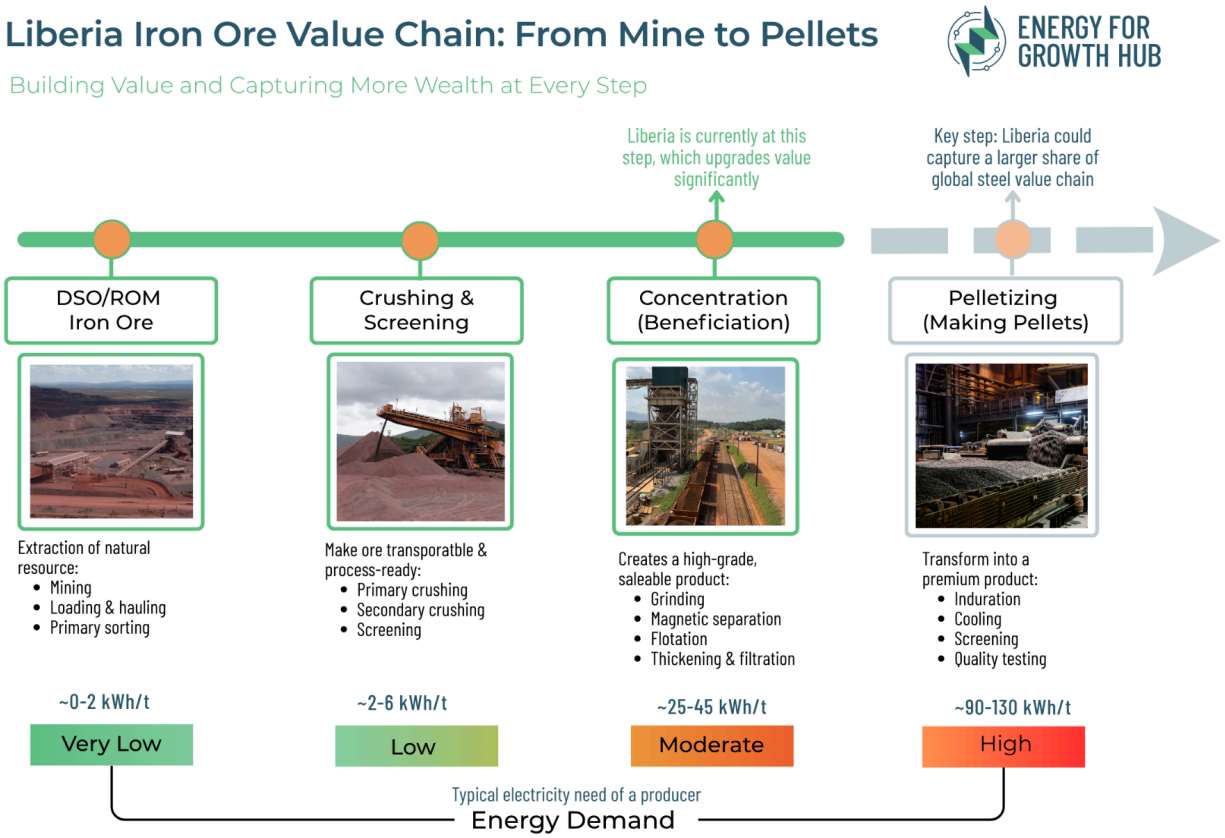
The core implication: Liberia's rubber processing ambitions are technically achievable without a transformational expansion of the national grid. But the grid's absence makes each processing investment more expensive and more fragile than it should be. Should Weala Rubber actually end up producing power, it will be at a competitive disadvantage with producers elsewhere.

Iron Ore Is the Next Frontier But Requires Significantly More Power to Achieve Liberia's Ambition

The same logic applies to Liberia's mining sector.

For decades, Liberia's iron ore industry has generated export earnings but relatively limited domestic industrial activity. Iron brought in $528 million, a quarter of all export earnings for the country, in 2025. Policymakers have repeatedly expressed interest in greater beneficiation and value addition. Yet Liberia's mineral development agreements have generally stopped short of mandating downstream processing. The extent of industrialization in the iron sector only goes

as far as processing ore concentrate. For example, the most recent extension of ArcelorMittal Liberia's agreement — which goes to 2050 — requires concentration of ore but does not require pelletization, direct reduction, or steelmaking.



Notes: Energy intensity ranges are indicative and can vary based on ore type, moisture, technology, plant design, and operational efficiency. **Sources:** Industry benchmarks, EIA, Minviro, Hatch, Vale, & other public studies. Images: Graeme Williams, Media Club, via Wikimedia Commons; Gyude Moore, iStock.

The distinctions between these stages matter and are rarely made clear in policy discussions. A concentrator is primarily a mine optimization asset: it upgrades ore quality and reduces transportation costs, with most of the benefit accruing to the mining company. A pellet plant is an industrial asset: it begins generating spillovers into the wider economy through power demand, technical labor, and logistics. A steel mill is a manufacturing asset. While each stage captures more value domestically and creates broader economic linkages, this is not an argument for Liberia to complete every stage. Our recommendation is for the next phase of iron ore industrialization to target pelletization. But the Government of Liberia must build an energy system capable of making this targeted stage possible.

The energy requirements escalate sharply at each stage. A modern pellet plant processing four million tons annually requires roughly 60 to 80 MW of continuous industrial power. Liberia's current installed generation capacity is approximately 150 MW — much of it unreliable. Liberia supplements this by importing roughly 50 MW via the Côte d'Ivoire-Liberia-Sierra Leone-Guinea Interconnector, bringing the total available power to an estimated 200 MW. The

challenge is therefore not merely attracting investment. It is creating an energy system capable of supporting that investment. As it stands, Liberia's energy system cannot support the industrial process directly beyond concentrates. Even that process is primarily powered by self-generation: AcelorMittal Liberia has installed 100 MW of heavy fuel oil generation to support its current industry.

Liberia Can Use its Partnership with MCC to Expand Foundational Transmission Infrastructure

Liberia has, at its fingertips, a secret weapon to advance its energy system and meet its industrial ambition. The US Government's Millennium Challenge Corporation (MCC) provides hundreds of millions of dollars in pure grant funding for large infrastructure investments, coupled with sector reform, in lower-income economies. In 2024, MCC selected Liberia for one of these large investments, and both the Boakai Administration and the MCC have decided that this significant injection of infrastructure money should go to the energy system.

The Government of Liberia and MCC are now in the details of designing exactly what those energy investments and reforms should be and where they should go. This is a huge opportunity to link Liberia's industrialization ambitions in rubber and iron ore with meaningful, timely, debt-free investments in Liberia's power sector.

The optimal path for the Government of Liberia is to direct attention where the private sector is least likely to invest: transmission and utility reform. Independent power producers have already shown interest in bringing new generation to Liberia's power sector; indeed the Liberia Electricity Corporation has signed two major agreements in the last year to deploy an additional 140 MW. These agreements are clear market signals for where the private sector is willing to invest. No such private interest exists on the transmission side. As such, the Government of Liberia should use the public money where it is most needed — transmission and utility reform — to leverage additional private investment in generation.

MCC already has a successful track record working with Liberia in the energy sector. In a previous energy investment from 2016-2021, the Government of Liberia and MCC partnered on a $257 million Compact, $207 million of which joined other donors to rehabilitate the Mt. Coffee Hydropower Plant alongside support for energy utility and regulatory reforms. The investment more than doubled the power generation capacity of the entire country, enabling Mt. Coffee to produce 88 MW. Now it's time to focus on transmission and grid upgrades and further sector reforms.

MCC's investment would contribute to closing the gap between current industrial reality and future industrial goals. A Liberian energy sector that can deliver industrial power will require private sector participation and regional power market integration. But that means regulatory predictability, clear rules on tariff setting, cost recovery, and clarification of rules and roles in the sector. Aligning MCC energy investments to identified offtakers and increased export earnings will enable Liberia to meet its clearly articulated industrial goals.

Energy Will Determine Whether Liberia Can Move from Raw Exports to Industrial Value Addition

Liberia's experience reveals a broader lesson for African industrial policy. Industrialization strategies are often designed as though policy decisions alone can alter economic structure. In reality, industrial transformation is constrained by physical systems.

The progression from raw materials to intermediate products and ultimately to manufactured goods requires a corresponding progression in energy capability. Countries that seek to industrialize must therefore think simultaneously about value chains and power systems. Industrial policy and energy policy are not separate agendas. They are the same agenda.

Having achieved the significant step of establishing political consensus around value addition, Liberia must now take advantage of its forthcoming MCC energy investment to create a reliable, abundant power system that will enable industrial growth. It is rare for the timing to align so perfectly in bilateral engagements. Liberia can use the injection of funds to build out the industrial policy that has endured across past and present administrations.

The future of Liberia's industrialization will depend less on additional executive orders and more on whether the country can build an energy system capable of supporting increasingly sophisticated production. The path from cup lump to compound rubber, from concentrate to iron pellets, and eventually from commodities to manufacturing is fundamentally a path measured in megawatts.