HUMAN RIGHTS IN THE LIFE CYCLE OF RENEWABLE ENERGY AND CRITICAL MINERALS

SUBMISSION TO THE UN SPECIAL RAPPORTEUR ON THE PROMOTION AND PROTECTION OF HUMAN RIGHTS IN THE CONTEXT OF CLIMATE CHANGE

AMNESTY INTERNATIONAL

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Amnesty International welcomes the important initiative taken by the **Special Rapporteur on the Promotion and Protection of Human Rights in the Context of Climate Change** to report on the positive and negative human rights impacts of renewable energy development, including the extraction and re-use of critical minerals. Amnesty is pleased to submit feedback and recommendations in response to the call for input for the consideration the Special Rapporteur, with a focus on questions 2, 6, and 7.

1. INTRODUCTION

Amnesty International welcomes the important initiative taken by the Special Rapporteur on the Promotion and Protection of Human Rights in the Context of Climate Change to report on the positive and negative human rights impacts of renewable energy development, including the extraction and re-use of critical minerals.[1] Amnesty is pleased to submit feedback and recommendations in response to the call for input for the consideration the Special Rapporteur, with a focus on questions 2, 6, and 7.

2. THE HUMAN RIGHTS IMPACTS OF THE LIFE CYCLE OF CRITICAL MINERALS, WHO IS DISPROPORTIONALITY AFFECTED BY NEGATIVE IMPACTS, AND WHY

Climate change threatens the enjoyment of civil, political, economic, social, and cultural rights of present and future generations. A decarbonization shift to renewables is underway as is evidenced by the following statistics:[2]

- Over US$3 trillion was expected to be invested in renewable energy by the end of 2024.[3]
- It is estimated that the demand for critical minerals will more than double by 2030 and increase sixfold by 2050 with their market value reaching US$400 billion, exceeding the value of all the coal extracted in 2020.[4]
- Investments in critical mineral development rose 30% in 2022, following a 20% increase in 2021.[5]
- Among the different minerals, lithium saw the sharpest increase in investment, a jump of 50%, followed by copper and nickel.[6]

A global phase out of extraction, production and use of fossil fuels is urgent, necessary and underway. But it is *how* the energy transition takes place that matters greatly.

The energy transition requires vast quantities of minerals to power vehicles, turn wind turbines, and store solar energy. Raw materials are locked in the soil and rock of the planet, rendering the nation-state where they are located the caretaker of these resources. Decisions by states to allow the extraction of these minerals have intra and inter-generational impacts on people living on or near mining and processing sites and on the local environment. Mineral agreements bind states to a global mining industry associated with significant human rights and environmental harms and impunity and exposes them to the risk of corporate capture.[7] The transactional nature of these relationships means resource-rich states risk falling into dependency and colonial extractivism models that leave little long-lasting benefits for their populations because more lucrative processing and manufacturing take place offshore. Amnesty International campaigns for a new model for energy transition mining, which we outline below.

Research by Amnesty International and other NGOs reveals that industrial mining operations can deepen existing or create new sacrifice zones in which human rights abuses are seldom adequately remedied:

- Generations of people living in the mineral-rich province of Lualaba, Democratic Republic of Congo face evictions, sub-standard relocation housing, inadequate compensation, health and environmental harms, loss of crops, and forced evictions and violence in the shadow of industrial copper and cobalt

[1] https://www.ohchr.org/en/calls-for-input/2025/call-inputs-human-rights-life-cycle-renewable-energy-and-critical-minerals

[2] Renewables include electric vehicles, solar panels, wind turbines, and battery storage units, and improved electricity grids.

[3] IEA (2024), World Energy Investment 2024, IEA, Paris https://www.iea.org/reports/world-energy-investment-2024, Licence: CC BY 4.0

[4] IEA (2023), Critical Minerals Market Review 2023, IEA, Paris https://www.iea.org/reports/critical-minerals-market-review-2023, Licence: CC BY 4.0

[5] Ibid

[6] Ibid

[7] Amnesty International, Injustice Incorporated: Advancing the right to remedy for corporate human rights abuses, POL 30/001/2014 pages 180-192

mines.[8] Medical professionals in Kolwezi report an increase in gynaecological problems, skin rashes, and respiratory issues since the mining boom began a decade ago. Scientific studies suggest wide-spread water, air and soil contamination from industrial cobalt and copper mining as the likely reason.[9]

- In the Philippines, industrial nickel mining undermines peoples' right to a clean, healthy and sustainable environment and as a result, communities in Palawan and Zambales report adverse harms to their livelihoods, access to water and health. Indigenous Peoples in Palawan say that companies have not respected their customary representatives and decision-making processes, while nickel projects prevent them from accessing parts of their ancestral lands and erode their cultures and identities as Indigenous Peoples.[10]

- A copper mine tailings dam failure in British Columbia, Canada resulted in long-term impacts on the watershed, yet mining regulations at the time did not provide mechanisms to enforce the polluter pays principle. Without legislation requiring safety before cost considerations, there is little incentive for companies to invest in best available practices and technologies designed to minimize environmental pollution.[11] The company responsible for the disaster did not pay the full costs of the clean up and was permitted to discharge mine effluent into a nearby lake, raising concerns about long-term health impacts for residents. BC taxpayers paid two-thirds of the disaster clean-up costs.[12]

- Norway and Japan have proposals to carry out deep sea mining (DSM) in their respective Exclusive Economic Zones (EEZ), and companies are calling on the International Seabed Authority (ISA) to award them contracts to mine in international waters, such as the Clarion Clipperton Zone (CCZ).[13] While proponents of DSM claim their methods will avoid the ecological and human rights problems associated with terrestrial mining, this is unproven. There is still much that is unknown about deep sea ecosystems and how DSM will impact these ecosystems and people who rely on them. DSM also raises other human rights concerns, including the rights to livelihood of fishing communities, Indigenous Peoples' food security, intergenerational equity and the rights of children to a clean, healthy and sustainable environment.[14]

UN experts have described places "where residents suffer devastating physical and mental health consequences and human rights violations as a result of living in pollution hotspots and heavily contaminated areas" as "sacrifice zones".[15] Often sacrifice zones are more accurately described as "racial sacrifice zones", when they are disproportionately concentrated in regions and countries populated by racialized people. As noted by the former *Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance*, "the primary beneficiaries of these racial sacrifice zones are transnational corporations that funnel wealth towards the global North and privileged national and local elites globally".[16] In addition to mining companies, multinational EV manufacturers and consumers are the main beneficiaries of this form of environmental racism.[17] To avoid repeating past abuses, companies in the energy transition minerals supply chain must urgently implement internationally aligned human rights policies and practices.

[8] Amnesty International, Initiative pour la Bonne Gouvernance et les droits humains, Powering Change or Business as Usual? Forced evictions at industrial cobalt and copper mines in the Democratic Republic of Congo, September 2023

[9] RAID UK, AfreWatch, Beneath the green: a critical look at the environmental and human cost of industrial cobalt mining in the DRC, March 2024

[10] Amnesty International, What do we get in return? How the Philippines nickel boom harms human rights, 9 January 2025, ASA 35/8607/2024

[11] Union of BC Indian Chiefs, Robyn Allan: Towards Financial Responsibility in British Columbia's Mining Industry, May 2016, pg 90

[12] Amnesty International Canada, A Breach of Human Rights: the human rights impacts of the Mount Polley mine disaster, May 2017

[13] International Seabed Authority, Exploration contracts: https://www.isa.org.jm/exploration-contracts/

[14] Amnesty International, Powering Change: Principles for Businesses and governments in the battery value chain, October 2022. ACT 30/3544/2021

[15] Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment, Supplementary information to the Report of the Special Rapporteur: Additional sacrifice zones, 2 March 2022, UN Doc. A/HRC/49/53, para. 3.

[16] Special Rapporteur on Contemporary Forms of Racism, Racial Discrimination, Xenophobia and Related Intolerance (Special Rapporteur on racism), Report: Ecological Crisis, Climate Justice and Racial Justice, 25 October 2022, UN Doc. A/77/549, para. 2

[17] Environmental racism describes any environmental policy, practice, law or regulation that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race, colour, descent and national and ethnic origin. See:

A cornerstone of human rights-compliant mining is human rights due diligence. Countless cases of corporate involvement in human rights harms linked to the mining sector could have been avoided with enforceable mandatory human rights due diligence measures. Amnesty advocates for such legislation to prevent human rights harm by corporate actors and promote respect for human rights and the environment. Decades of human rights and environmental abuses by extractives industries have proven that voluntary corporate social responsibility initiatives are woefully inadequate to protect rights. However, legislation alone is no guarantee that rights will be respected in the context of extractives projects. When abuses occur, victims should have the right to access adequate remedy, including guarantees of non-repetition. States should ensure victims of human rights abuses in the context of critical minerals projects have clear and timely access to remedy through both judicial and non-judicial mechanisms.

While there is no room for doubt that mining minerals for the energy transition is necessary and will only increase to meet demand, Amnesty is concerned that host governments have not taken appropriate steps to protect the right to a clean, healthy and sustainable environment. For example, people living near copper and cobalt mines in the DRC's southern copper belt report a variety of health impacts that scientists link to the contamination of their water and soil from industrial mining operations.[18] In the Philippines, residents living near nickel mines interviewed by Amnesty International report respiratory and skin disease, headaches, urinary tract infections, and eye irritation.[19] Governments hosting industrial mining operations linked to the energy transition should carry out their own independent and publicly available sampling and analysis of air, soil, water and food sources and incorporate this data into their risk assessments and early intervention plans. Where contamination is found, governments should require companies to develop and implement remediation plans.[20] Companies that fail to comply in a timely manner should face appropriate financial and other penalties.

A global upscaling of minerals mining will necessitate a vast number of tailings waste storage facilities. Governments should legislate new measures or improve and enforce existing laws to ensure tailings storage safety. They should require companies to prioritize tailings storage safety over cost considerations in the design, construction and operation of mine waste facilities and mandate the best available technologies and practices. They should also require that companies transparently and publicly disclose information about expansion and closure plans, particularly concerning water management and mine waste risks.[21] Similarly, environmental impact assessments and approvals should consider the meteorological impacts of climate change, paying particular attention to anticipated water volumes at open-pit and underground sites, including locations where wet storage for tailing is proposed.

Requiring companies to post a fully costed and independently verifiable financial surety prior to commencing construction is an effective way to ensure best tailings dam safety technologies and practices are incorporated into the design, operation, and closure of a mine[22]. Such financial assurances discourage cost-cutting measures and ensure financial coverage is available for long-term on-site remediation and unforeseen environmental harms such as tailings pond breaches.[23]

The current economic framework for the energy transition model prioritizes overconsumption and disposability over planetary and human health. Coordinated efforts are required to reduce the demand for

Special Rapporteur on Contemporary Forms of Racism, Racial Discrimination, Xenophobia and Related Intolerance, Ecological Crisis, Climate Justice and Racial Justice, para. 45.

[18] Rights and Accountability in Development (RAID UK) reported on the environmental cost of industrial copper and cobalt mines in the Democratic Republic of Congo, citing scientific studies on the impacts of industrial mining pollution on water, soil, and livelihoods, https://raid-uk.org/wp-content/uploads/2024/03/Annexe-1-Selected-Studies.pdf

[19] Amnesty International, What do we get in return? How the Philippines nickel boom harms human rights, 9 January 2025, ASA 35/8607/2024 page 64

[20] Ibid page 86

[21] Emerman, Steven H., 2021. Bridging the Gap: Towards Best International Standards on Mine Waste Safety in British Columbia. BC Mining Law Reform and MiningWatch Canada, https://reformbcmining.ca/reports

[22] Amnesty International Canada, A Breach of Human Rights: The human rights impacts of the Mount Polley mining disaster, British Columbia, Canada, May 2017 page 14
GRID-Arendal and UN Environmental Programme report, Safety is No Accident

[23] Union of BC Indian Chiefs, Robyn Allan: Towards Financial Responsibility in British Columbia's Mining Industry, May 2016, pg 54

new sources of raw materials and thus reduce the burdens placed on fenceline communities. Car-dependent states, for example, could limit the size of private EVs, which would reduce battery size and potentially lower minerals demand. They should also deprioritize the replacement of fossil fuel-powered automobiles 1:1 with electric vehicles and simultaneously invest in accessible and affordable public transport for rural, urban and Indigenous communities, powered by human rights consistent renewable energy[24], as well as dedicated biking, rolling and walking lanes for pedestrians in urban centres.[25]

A just energy transition must also incentivise new ways to recycle minerals, such as:

- repurpose existing batteries and other energy transition technologies
- harmonize human rights consistent recycling initiatives across jurisdictions with incentives for companies and consumers until recycling becomes the established norm,
- require battery and other technologies to be designed for replacement, recycling, and repurposing. "Right to Repair" policy implementation could extend the lifespan of products and help reduce overconsumption.[26]

A zero-waste hierarchy for batteries should be prioritized. Transitioning to renewable energy technologies does little to reduce the consumption of raw materials if strong parallel investments in these policies and practices aren't implemented. The planet cannot withstand a new 'gold rush' for energy transition minerals without adequately preparing our governments, workforces, communities and businesses for a circular economy approach towards consumption[27].

3. HOW CAN INTERNATIONAL COOPERATION ON FINANCE, CAPACITY AND TECHNOLOGY RELATED TO THE FULL LIFE CYCLE OF RENEWABLE ENERGY AND CRITICAL MINERALS CONTRIBUTE TO PROTECT HUMAN RIGHTS?

Higher-income and high-emitting countries have done far too little to phase out fossil fuels or provide adequate finance to construct renewable energy infrastructure.[28] The implications of such massive shortfalls to fund measures to reduce climate impacts and emissions, address the unavoidable impacts, increase training and infrastructure geared towards renewable energy, and protect the rights of people living in fenceline communities, cannot be understated.[29] In addition to obligations under the UNFCCC and the Paris Agreement, all states - particularly high-income historical emitting countries - must provide climate finance to lower income countries. Further, all states in a position to do so must ensure adequate resourcing for just transitions away from fossil fuel production and its use in all sectors to a zero-carbon economy. This should include increased international assistance, debt relief, cooperation to tackle tax avoidance and evasion, and scaling up investment in renewable energy and away from fossil fuel subsidies and investment.

The energy transition requires new infrastructure such as electricity transmission lines, solar arrays, wind turbines, charging stations, sub-stations, hydro dams, and changes to roads, airports and rail lines. These requirements will vastly increase the need for metals and minerals like copper and graphite[30]. In addition, it will require a massive upscaling of recycling infrastructure, including incentives, pick up and delivery of spent EV batteries and energy storage units, harmonisation across jurisdictions to ensure recycling capabilities are

[24] The use of liquid crop-based biofuels is not a suitable response given their high human rights and environmental impacts
[25] Amnesty International, Stop Burning Our Rights: What governments and companies must do to protect humanity from the climate crisis, POL 30/3476/20217 June 2021
[26] Amnesty International, Powering Change: Principles for Businesses and governments in the battery value chain, October 2022. ACT 30/3544/2021
[27] GAIA, Zero waste hierarchy for batteries, Zero Waste Hierarchy for Batteries_06 26 accessed 17 March 2025
[28] Amnesty International, Plenty to go around: Mobilizing finance for climate justice, POL 30/8850/2025 16 January 2025
[29] Amnesty International, Madagascar: It will be too late to help us once we are dead 26 October 2021 AFR 35/4874/2021 and A Burning Emergency: Extreme heat and the right to health in Pakistan 4 June 2023 ASA 33/6823/2023
[30] International Energy Agency, https://www.iea.org/reports/global-critical-minerals-outlook-2024, accessed 23 April 2025

consistent and aligned, public education efforts, and a repurposing industry. These transformations cost money and take years to develop, particularly without a global imperative to cooperate across jurisdictions. Obtaining buy-in from corporate actors who commonly justify their lack of transparency by claiming their right to a competitive advantage, is a further obstacle.

A global effort among nations, EV and technology companies to develop processes and industries relevant to managing the full life cycle of renewable energy and critical minerals recycling is required to protect human rights. Amnesty International's *Powering Change: Principles for governments and businesses in the battery value chain* addresses this issue with the following recommendations:[31]

- Governments should remove proprietary barriers to the reuse and refurbishing marketplace, and use regulation to increase the durability, reparability, and reuse value of battery powered products. Pass "Right to Repair" reforms, creating durability labelling, require all batteries be removable with standard tools, and invest in battery reuse research. Governments should also set 100% collection targets for used EV batteries, with material recovery targets of at least 90% - and higher where feasible - for critical battery materials such as cobalt, lithium, nickel, copper. Governments should encourage the market for secondary materials with the aim of moving towards fully recycled batteries
- Ensure transport and manufacturing are powered by renewable sources of energy. Governments must rapidly shift their electric grids to 100% renewable energy, with developed countries achieving this by 2040 at the latest. Governments should support Green New Deal-style plans and investments in renewable energy solutions rooted in a just transition for fenceline communities.
- To fulfil the right to a healthy environment (whether at upstream mine sites or recycling centres) governments must effectively monitor and enforce compliance with environmental laws and hold companies to account when they violate these laws. Requirements to minimize air pollution, maintain clean and sufficient water resources and healthy soil, and protect biodiversity must be established, monitored, and penalties swiftly enforced when there are violations.
- Manufacturers of battery technologies must dramatically scale up their use of recycled minerals and must design batteries for safe and simple disassembly and reuse of suitable components with efficient recycling of all the other battery minerals and materials they contain. Manufacturing should minimize and where possible avoid the use of hazardous materials. Businesses running recycling operations must guarantee workers' rights to safe and healthy working conditions, and communities' rights to a healthy and clean environment.

For the right to a healthy and safe environment to be respected, states will need to cooperate to harmonize regulations and penalties, making it less attractive to ship e-waste to jurisdictions with laxer environmental or labour laws, tax loopholes or rampant corruption.[32]

A holistic approach that puts planet and people front and centre is required. In the global race to access and control transition minerals - to have leverage over other nation-states or increase domestic corporate market share - states are either fast-tracking critical minerals development[33] or attempting to water down efforts to legislate human rights and environmental due diligence[34]. By ignoring human rights and accelerating unfettered economic growth in global metals and minerals markets, states, companies and investors risk turning their backs on their international commitments to prevent and remediate the harms associated with energy transition minerals mining. The window to make these urgently needed changes is closing. If we don't pull together as nations to protect our planet and its people, we will look back on this time with regret for what we could have done if we'd only had the political will and commitment.

[31] Amnesty International, Powering Change: Principles for Businesses and governments in the battery value chain, October 2022. ACT 30/3544/2021

[32] Amnesty International, Injustice Incorporated, Advancing the Rights to Remedy for Corporate Abuses of Human Rights, 2014, pages 191-192

[33] Canada, Privy Council Office statement, 1 February 2024, https://www.canada.ca/en/privy-council/news/2024/02/chair-of-ministerial-working-group-on-regulatory-efficiency-for-clean-growth-projects-issues-statement.html, and USA Presidential Executive Order Immediate Measures to Increase America Mineral Production, 20 March 2025

[34] Joint Civil Society Statement reacting to lack of majority in COREPER on CSDDD, 28 February 2025, https://www.amnesty.eu/news/european-union-joint-civil-society-statement-reacting-to-lack-of-majority-in-coreper-on-csddd/

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