

[MAPPING]
COMMUNITY RESISTANCE
TO THE IMPACTS
AND DISCOURSES OF MINING
FOR THE ENERGY TRANSITION
IN THE AMERICAS



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The Environmental Justice Atlas (www.ejatlus.org) documents and catalogues social conflict around environmental issues. The EJAtlas is coordinated by a group of engaged researchers at the Institute of Environmental Sciences and Technologies of the Autonomous University of Barcelona (ICTA-UAB), in collaboration with activists and researchers from all around the world. Dr. Leah Temper and Professor Joan Martinez Alier are the founders and directors of the EJAtlas. The Direction and Coordination group of the EJAtlas is led by Dr. Temper, Dr. Martinez Alier, Dr. Daniela del Bene, Dr. Mariana Walter, Dr. Grettel Navas and Dr. Arnim Scheidel. More about this project: www.envjustice.org.

MiningWatch Canada is a non-profit organization that provides a public interest response to the threats to public health, the environment, and community interests posed by irresponsible mineral policies and practices in Canada and around the world. It provides timely information and support to mining-affected communities and related organizations, and works to improve mining-related policies. <https://miningwatch.ca>

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EXECUTIVE SUMMARY

HIGHLIGHTS:

- The World Bank estimates that more than 3 billion tons of metals and minerals could be required over the next 30 years to power the technologies for the global energy transition. Key critical metals and minerals include copper, lithium, graphite, cobalt, nickel, and rare earths.
- The global mining industry, often supported by host governments, is positioning mining as a “green solution” to the climate crisis. This “green mining boom” is rapidly expanding into culturally and ecologically sensitive areas, increasingly affecting Indigenous and human rights, community livelihoods and the environment.
- Communities, academics, and activists say that an energy transition that heavily depends on mining new materials without considering materials and energy for what, for whom, and at what socio-environmental costs will only reinforce injustices and lack of sustainability that have deepened the climate crisis in the first place.
- Mobilized communities affected by the growing pressure for strategic metals in nine countries of the Americas – Argentina, Chile, Bolivia, Peru, Ecuador, Panama, Mexico, USA, and Canada – have come together with the teams at Environmental Justice Atlas and MiningWatch Canada to document 25 individual cases – mostly related to Canadian and Australian companies – and identify regional trends as mining for the energy transition accelerates.

The context

The World Bank estimates that over the next 30 years, more than three billion tons of metals and minerals will need to be mined to power the energy transition. Six key minerals (lithium, copper, graphite, cobalt, nickel, and rare earth metals) will be required in significant quantities to build wind turbines and solar panels and the electric grids that sustain them, as well as electric vehicles and the batteries necessary to decarbonize the transportation sector. Proponents of mining position the industry as a key player in the fight against the climate crisis, claiming that without the metals and minerals that make renewable energy possible, our world has no hope of limiting global warming to

even 2°C. And, proponents say, with technological advances in the mining industry, it's now possible to limit environmental impacts and essentially make mining "green."

Within this narrative, mining is seen as both unavoidable and urgent. However, communities across the world are sounding alarm bells, concerned about the well-documented human rights and environmental costs of mining. Communities are forging alliances to share stories and strategies to push for a just energy transition – one that doesn't further entrench the same extractivist practices that have caused the climate emergency in the first place, nor one in which the health of certain communities is sacrificed to allow for continued over-consumption, largely driven by the Global North.

The map and report

Mobilized communities affected by the growing pressure for strategic metals in nine countries of the Americas – Argentina, Chile, Bolivia, Peru, Ecuador, Panama, Mexico, USA, and Canada – have come together with the teams at Environmental Justice Atlas and MiningWatch Canada to document 25 individual cases and identify regional trends as mining for the energy transition accelerates. A report and an interactive map highlighting these cases is just the beginning of a collective process with communities from around the world and will be in continuous expansion to include additional experiences as mining for the energy transition intensifies.

KEY FINDINGS

A. Metals and minerals for what? From where?

After the construction of electricity grids, replacing conventional cars with electric cars – which require six times the amount of metals and minerals – and an overall decarbonization of the transportation sector will require the largest amounts of metals and minerals of the energy transition. Renewable energies (solar and wind) follow in the material requirements. Mining is itself very energy-intensive. While many metals are required, the six key ones are: rare earth metals, cobalt, graphite, nickel, copper, and lithium. Copper will be the most highly in demand mineral for the energy transition, with approximately 76% of total copper demand (estimated for 2040) going towards the electric grids to support renewable energy.

To better understand where these minerals are currently being mined and where they will likely be mined in the future, it is important to take into account both current production and reserves. The Americas are an important source for all six critical minerals, but especially lithium (a third of actual production and over 70% of world's reserves and resources) and copper (over half of the world's production and reserves). The Americas also hold a significant proportion of the world's known reserves of rare earth metals (about 19%), graphite (about 23%), and nickel (about 26%). Congo and Australia contain over 70% of the world reserves for cobalt.

B. The greenwashing discourse

Myths of “green,” “sustainable” and “climate smart” mining are gaining traction across the world. Companies are painting their mining activities as being part of the solution to the climate crisis, attracting investors by promoting their own Environmental Social and Governance (ESG) factors and promising massive profitability of their projects due to the urgency of transitioning to renewable energy. Companies point to an undersupply of these critical minerals in an effort to show the strategic role they play in filling the gap. Some companies, like Teck Resources, have even signed on to the Paris Agreements, committing themselves to be carbon-neutral by 2050.

Likewise, national governments are rushing to position their countries as sources for these critical minerals, promoting massive investments in mining; many governments from both North and South are emphasizing that these investments in strategic minerals are a key component of their post-COVID-19 economic recovery plan.

C. Key socio-environmental impacts of mining

Large scale mining generates intense socio-environmental impacts and, according to Global Witness, is linked with the highest number of killings of environmental defenders worldwide. Mining projects are encroaching on more and more fragile and biodiverse ecosystems like the Amazon and the Salares, without recognition of the rights of local communities who inhabit these territories – many of whom have lived in these regions for hundreds, if not thousands of years. While companies are marketing these mines as “green,” many mines are the same size and use the same techniques to extract minerals as the large-scale gold, silver, and copper mines that already exist on the continent. Some additional impacts include:

- a. Impacts on fragile and (un)protected ecosystems that regulate our global climate:** Many of the current and proposed mining projects are built in recognized protected areas and biodiversity hotspots. Projects are quickly expanding into the Ecuadorian Amazon and rainforests, glacial areas in Peru, the salt flats in Chile and other Ramsar-designated wetlands in Argentina and connected river systems – areas that play important roles providing fresh water and sustaining flora and fauna. The environmental impacts of mining are felt much beyond the immediate area of the project, affecting entire regions through watersheds, placing biodiversity and species at risk of extreme harm and, in some cases, even extinction. Furthermore, resource extraction can harm the ecosystems that play an important role regulating our global climate, such as the case with the Amazon.
- b. Impacts on water:** Mining – particularly for lithium – is a water-intensive activity that can endanger the quality and quantity of water available to communities. In some arid areas, like in Argentina, water shortages are already a reality. While communities face water emergencies, mining operations can exceed the daily water usage of the inhabitants of the region, putting further pressure on already-arid regions and putting at risk the availability of drinking water. Mining is also a

source of water pollution. To produce one ton of lithium in the salt flats in Atacama (Chile), 2,000 tons of water are evaporated, causing significant harm to both the availability of water and the quality of underground fresh water reserves.

- c. What's left? Waste.** Only a small portion of what is mined is valuable metal; the remainder is left behind as mine tailings and waste rock. Worldwide and in the Americas, there is a sustained decrease in the ore grades of mining deposits, which implies that increasing amounts of resources are used to obtain small amounts of metals, leaving an enormous environmental impact including toxic chemicals that have to be treated in perpetuity. The proposed Authier lithium project in Quebec (Canada) seeks to build a 1km long, 225m-deep open-pit mine and generate 60 million tons of mining waste. The proposed Sonora open-pit lithium mine in Mexico will generate 131 million tons of waste over the course of 20 years of production, with 25 million tons of wet tailings.
- d. Impacts on traditional livelihoods:** In places like Salar de Olaroz (Argentina) and Salar de Atacama (Chile), lithium mining is already impacting agricultural lands and local economies. In Bolivia, near the salt flat of Uyuni, local communities are concerned about the negative effects mining may have on tourism and other agricultural activities that sustain their livelihoods, such as the production of quinoa, the raising of llamas, and the harvesting of roots, plants, and other herbs.
- e. Impacts on traditional knowledge and cultural heritage / sacred places:** Many of the current and proposed mines are operating in Indigenous territories across the Americas, putting at risk sacred sites and burial grounds, as well as other culturally important areas where communities hunt and gather traditional medicines.
- f. Lack of information and public consultation:** Across the documented cases, companies provided little to no information about their projects, preventing meaningful community participation and, in the case of Indigenous communities, violating their rights to free, prior and informed consent. At the same time, many companies and governments are using tactics to divide and intimidate communities to prevent cohesive organizing.
- g. Violence and criminalization:** Three quarters of the attacks reported by Global Witness in 2020 were against environmental defenders in Latin America – many of whom were defending their communities from mining projects. Common issues include: a lack of recognition of the rights of communities, their livelihoods and worldviews, as well as other forms of violence, such as direct threats, intimidation, and false charges filed against environmental defenders. Communities also report attempts by the mining industry to co-opt and divide communities. In some cases, the police or military have been deployed to support mining development.

We need a different kind of energy transition

The voices of grassroots communities, experts, academics, and activists are being ignored in the plans for a global energy transition. A transition that heavily depends on mining new materials without considering materials and energy for what, for whom, and at what socio-environmental costs will only reinforce the injustices and unsustainability that have led us to the climate crisis in the first place. Improved efficiency and recycling of materials are necessary components in the transition, but these strategies alone will not address the growing demand for these materials. Significant reductions in material and energy consumption, particularly in the Global North, are a key component to a just transition.

INTRODUCTION

The World Bank estimates that over the next 30 years, it will be necessary to extract 3 billion tons of minerals and metals to drive the global energy transition¹. The International Energy Agency (IEA) estimates that in order to reach the goals in the Paris Agreement on climate change, the extraction of metals and minerals would have to be quadrupled between 2020 and 2040². These energy transition scenarios – based on the intensification of the extraction of metals and minerals – are being imposed as urgent and necessary in order to avoid global temperature rises over 2°C and to advance towards a “greener” and “more sustainable” global economy.

The generation, storage, transport and use of renewable energies require increasing quantities of metals and minerals such as copper, bauxite, lithium, graphite, nickel, and rare earths, among many others. Nonetheless, large-scale (and industrial) mining, through which these materials are extracted, is an activity with high environmental and social impacts. It is a source of pollution, it destroys livelihoods and is linked to various forms of violence.

This report launches a series of mappings that aim to bring awareness to the unsustainability and social and environmental injustice of the energy transition currently being driven around the world. In this report, we examine the conflicts caused by the energy transition in the Americas. Twenty-five socio-environmental conflicts have been documented in relation to the extraction of three strategic metals and minerals –lithium, copper and graphite –in nine countries in the Americas. We make visible the voices and actions of local actors who are confronting and resisting the advancement of these projects and the false discourses behind them.

This report challenges how green and sustainable these energy transition scenarios are, given that they are based on a deepening of global crises caused by extractivism. This report joins a global call to rethink social and environmental transition models to ensure that they are responsible, just, and sustainable.

¹ World Bank, 2020. “The Mineral Intensity of the Clean Energy Transition”. <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>

² International Energy Agency (IEA). 2021. “The Role of Critical World Energy Outlook Special Report Minerals in Clean Energy Transitions”. <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

The report presents the results of a mapping process about the growing extractivist pressures of the energy transition in the Americas, collaboratively produced by organized communities and regional researchers, together with the Environmental Justice Atlas and MiningWatch Canada. An interactive map of the American continent was developed to show some of the current struggles. The map is constantly evolving as the issue advances rapidly and aggressively in the region and around the world.

These are communities from the Global South who have played a marginal role in climate change, yet who are the ones facing – and organizing to resist – the severe repercussions of the very policies aimed to mitigate the climate crisis.

The report has four sections. In the first section, we present some key data about the relationship between current energy transition scenarios and the intensification of mining extractivism in the Americas and around the world. In the second section, we introduce the map and the 25 documented cases. The third section examines some impacts of “green” mining and the social movement organizing it fosters. The fourth section discusses some discourses around so-called “green” mining.



Protests in Traslasierra. 2019. Photo: Noalamina.org

[1]

MINING AND THE ENERGY TRANSITION. METALS AND MINERALS FOR WHAT?

In this first section, we outline projections about the quantity of metals and minerals that are being presented as *necessary* to satisfy hegemonic energy transition scenarios. At the same time, we invite readers to be critical of these scenarios for they do not question the current model of consumption (both in terms of energy and materials), nor ask key questions about energy requirements for what, for whom or at what cost, nor consider who promotes it, wins or loses. We suggest that instead, what we do *need*, are new perspectives and ideas that allow us to reflect on *what* ecosocial crisis we find ourselves in and *how* we can transform the ways in which we relate, consume and live together.

1.1 SECTORS WITH HIGHER DEMANDS FOR METALS AND MINERALS FOR THIS ENERGY TRANSITION.

One of the sectors for the energy transition with the highest demand for metals and minerals is the automotive or electromobility sector. Replacing traditional cars with electric cars will entail a massive rise in the quantity and diversity of metals and minerals required.

On average, it is estimated that an electric car requires six times more metals and minerals than a conventional car, mainly due to the high demand of copper, graphite, and nickel and, in lesser quantities, lithium, cobalt, rare earths, and manganese (less abundant minerals). These requirements are only magnified if we consider growth scenarios for the motor vehicle fleet in its entirety.

Another key sector to understand the extractive pressures of the current energy transition model is the generation of electric power through renewable sources. The IEA estimates that in the year 2040, wind and solar technologies could represent 82% of the total demand (in volume) of metals and minerals needed for “clean” or low carbon emissions³ power plants (46.6% for solar power, both photovoltaic and thermal concentration,

³ This category includes the following technologies: solar photovoltaic and thermal concentration, land-based and sea-based wind, hydroelectric, biomass, geothermal, hydrogen and nuclear.

and 35.8% for wind energies)⁴. Photovoltaic power plants require significant quantities of copper and silica, while wind power plants require copper and zinc and lower quantities of manganese, chromium and nickel.

In its estimations, the World Bank also highlights the enormous quantity of aluminum needed for photovoltaic solar power plants. It projects that up to the year 2050, 40 million tons of aluminum may be needed – representing 88% of total demand for metals and minerals for this technology (compared to 11.8% for copper). On the other hand, the demand of copper for photovoltaic energy could reach 5.1 million tons by 2050⁵.

Other studies also point to the rise in the demand for other materials needed to support energy infrastructures. For example, it's been estimated⁶ that the foundation for a single wind turbine requires an average of 1,200 tons of cement –a very significant figure if we consider the number of wind turbines that are to be built.

On the other hand, while mining is a strategic activity for the development of renewable energy sources, mining itself is an (increasingly) high energy demanding activity and is a source of carbon emissions. For example, in 2019, the mining sector represented a third of the total electricity consumption in Chile⁷ and Peru⁸. In Mexico, in 2018, the electricity consumption of the mining sector matched the domestic consumption of 46 million people (a third of the Mexican population)⁹. As the quality of mineral reserves decreases – a global trend for various metals and minerals – the volume of raw materials that is extracted and processed increases, which in turn require more energy, water and other consumables (while generating more waste).

A recent study¹⁰ analyzed copper mines worldwide and concluded that, on average, the grade and the concentration of strategic minerals in reserves has decreased by 25% over the last 10 years. In that same period, the total energy consumption has risen

As the quality of mineral deposits decreases the volume of raw materials extracted and processed increases, which requires more energy, water and other consumables (while generating more waste).

⁴ International Energy Agency (IEA). 2021. "The Role of Critical World Energy Outlook Special Report Minerals in Clean Energy Transitions". <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

⁵ The difference between the estimations of copper demand of the IEA and the World Bank is due to the various scenarios used but also to the existing uncertainty about the real demand generated by the energy transition process.

⁶ Wind Watch. "Wind power needs American meals and minerals". <https://docs.wind-watch.org/Wind-Power-Metals-Minerals.pdf>

⁷ Chilean Copper Commission (COCHILCO). (2020). "Informe de actualización del consumo energético de la minería del cobre al año 2019" <https://www.cochilco.cl/Mercado%20de%20Metales/Informe%20de%20Consumo%20de%20Energ%C3%ADa%202019.pdf>

⁸ Ministry of Energy and Mines of Peru (MINEM) (2019). "Balance Nacional de Energía"; <https://cdn.www.gob.pe/uploads/document/le/1875333/Balance%20Nacional%20de%20la%20Energ%C3%ADa%202019.pdf>

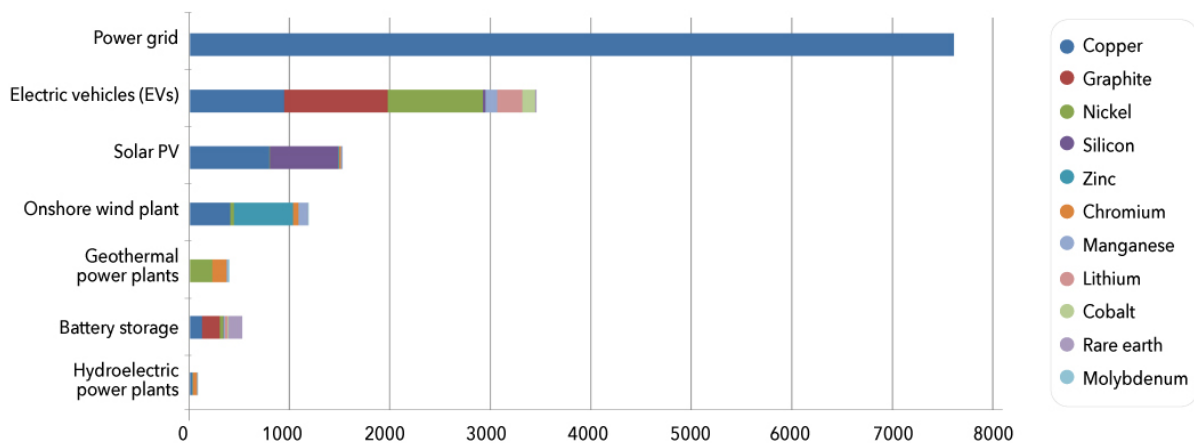
⁹ GeoComunes. (2020). Alumbrar las contradicciones del Sistema Eléctrico Mexicano y de la transición energética (Illuminating the contradictions of the Mexican Electrical System and the energy transition) http://geocomunes.org/Análisis_PDF/GC_SistemaElectrico_2020.pdf

¹⁰ Guiomar Calvo, Gavin Mudd, Alicia Valero and Antonio Valero. (2016). "Decreasing Ore Grades in Global Metallic Mining: A Theoretical Issue or a Global Reality?" Resources 5, no. 4: 36. <https://doi.org/10.3390/resources5040036>

at a rate higher than production (46% rise in the use of energy against a 30% increase in production).

Another activity that will require a significant amount of metals and minerals, especially copper and aluminum, is the development of electrical grids to connect all the newly-built power plants. Renewable power plants are located in areas with good potential to harness wind or sun power, and they are usually far away from the areas of consumption. The development of an electrical grid to supply the huge number of recharging stations for electric cars must also be considered. The IEA estimates that in 2040, 7.6 million tons of copper will be needed to build these electrical grids. This would represent 76% of the total demand for copper deemed “necessary” for the energy transition process for that year.

Graph 1. ESTIMATION OF METALS AND MINERALS REQUIRED BY VARIOUS SECTORS RELATED TO THE ENERGY TRANSITION FOR THE YEAR 2040 (ACCORDING TO CURRENT STATED POLICIES), IN THOUSANDS OF TONS.



Source: Prepared by the authors based on data from the International Energy Agency (2021). Note: these projections do not include the estimated demand for aluminum from certain sectors (electricity grids or photovoltaic power plants). The figure also doesn't account for the demand for aluminum that the IEA estimates at 12.8 million tons for the year 2040. Solar PV refers to the two technologies — Photovoltaic and Thermal Concentration.

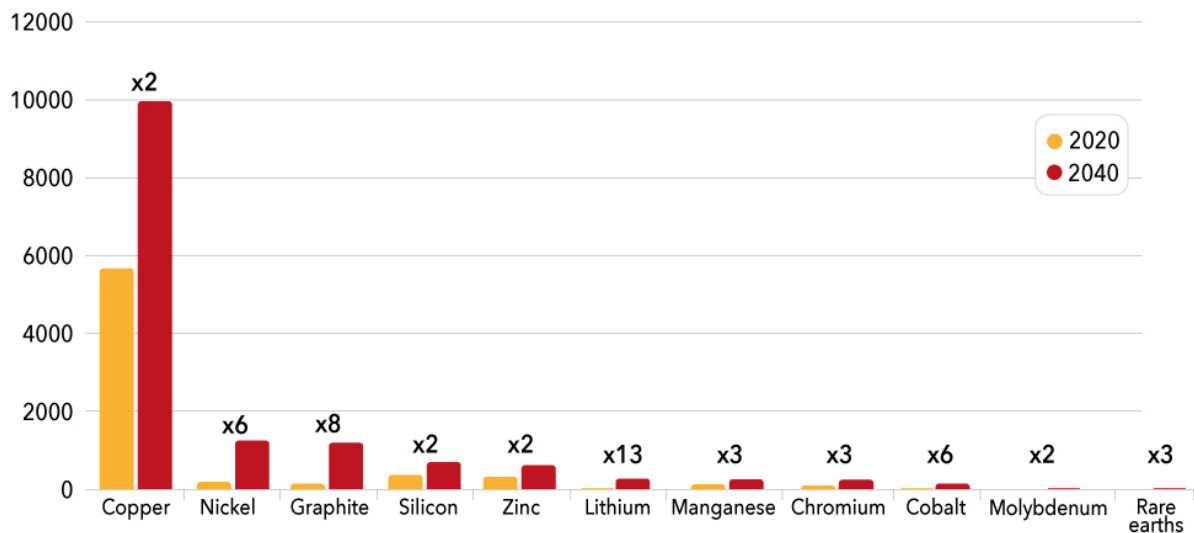
1.2 STRATEGIC METALS AND MINERALS.

All estimations point to copper as one of the most in-demand metals for current energy transition plans.

The IEA estimates that in 2040, almost eight times more copper will be required than nickel or graphite, the other two metals with the highest demand. Nonetheless, copper is much more abundant than other metals and minerals.

As shown in graph 2, while the extraction of copper could double between 2020 and 2040, graphite, lithium or cobalt could increase by 8%, 13% and 6% respectively, which means unprecedented pressure to open and expand mines in order to extract these metals and minerals and keep up with the rise in demand¹¹.

Graph 2. ESTIMATES FOR THE DEMAND FOR METALS AND MINERALS FOR THE YEAR 2020 AND 2040 (ACCORDING TO CURRENT STATED POLICIES), IN THOUSANDS OF TONS.



Source: Prepared by the authors based on data from the International Energy Agency (2021). Note: the multiplying factor estimated for the demand of each metal and mineral is indicated between 2020 and 2040. Note: the numbers "X2," "X6," etc. above each metal and mineral correspond to the amount of times that the volume could multiply between 2020 and 2040.

¹¹ The IEA estimates that in order to achieve the goals outlined in the Paris Memorandum of Understanding, the demand for strategic metals and minerals would grow exponentially between 2020 and 2040 – requiring 42 times the amount of lithium, 25 times the amount of graphite, 21 times the amount of cobalt, 11 times the amount of nickel, and 7 times the amount of rare earths.

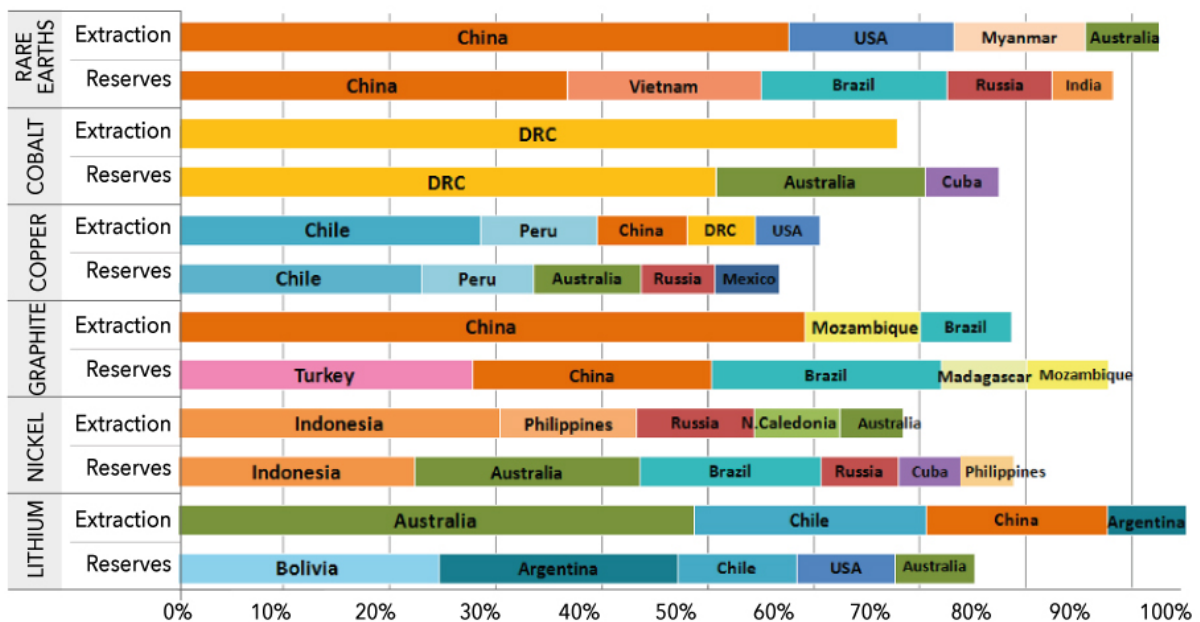
1.3 WHERE ARE THESE METALS AND MINERALS EXTRACTED AND WHERE ARE THEIR RESERVES?

The metals and minerals needed for the energy transition currently underway are concentrated geographically.

In the case of lithium, rare earths, graphite and cobalt, mining is currently taking place in only three to five different countries, and most of the reserves are estimated to be found in fewer than seven countries.

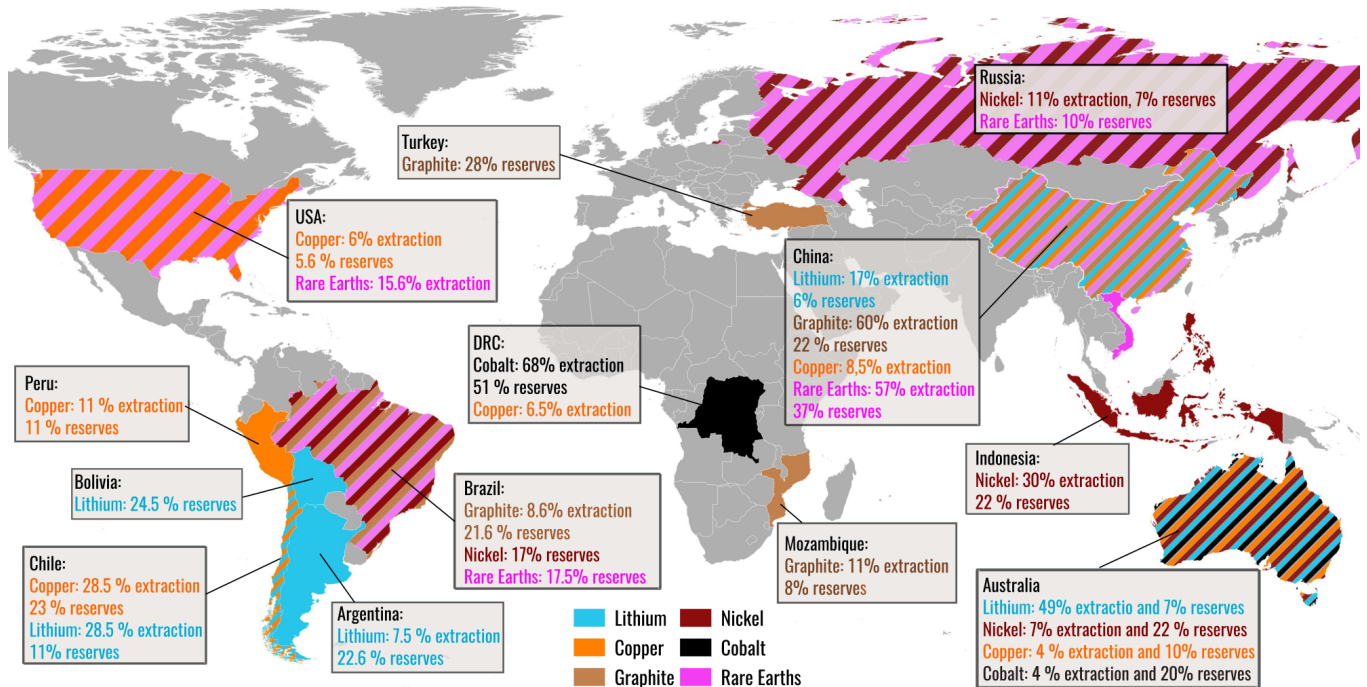
Graph 3 shows in which countries most of the current extraction and known reserves can be found. China has most of the active mines and reserves for many of these metals and minerals (rare earths and graphite, but also lithium and copper). Likewise, Australia is home to most of the current lithium mining and has reserves in cobalt, copper and nickel.

Graph 3. COUNTRIES WHO MINE OR HOLD RESERVES GREATER THAN 5% OF THE WORLD TOTAL FOR KEY CRITICAL METALS AND MINERALS FOR THE ENERGY TRANSITION (2020).



Source: Prepared by the authors based on data from the US Geological Survey (USGS) for the year 2020.

Graph 4. GEOGRAPHIC DISTRIBUTION OF THE COUNTRIES WITH THE LARGEST ESTIMATED RESERVES AND CURRENT MINES FOR SIX CRITICAL METALS AND MINERALS FOR THE ENERGY TRANSITION.



Source: Prepared by Yannick Deniau based on USGS data (2020).

This data also demonstrates the American continent’s strategic position for some metals and minerals. In the case of lithium, for example, Chile (22%), Argentina (7.5%) and Brazil (2.3%) together represent almost a third of the current global extraction. Bolivia, Argentina and Chile have 58% of the estimated lithium reserves and, if we add that to the reserves found in the USA, Canada, Mexico and Peru, **the American continent is home to three quarters of all known global lithium reserves.**

Chile and Peru are responsible for 40% of current global extraction of copper – the mineral with the highest estimated demand. If we add copper extraction in the USA, Canada and Mexico, **the Americas represent over half of global copper extraction.** These countries also represent almost half the reserves, especially Chile and Peru.

The presence of other metals and minerals on the American continent is also noteworthy. Globally, the USA is responsible for 15% of the extraction of rare earths and Brazil holds 17% of global reserves. In the case of graphite, Brazil extracts 8.6% and holds 21.6% of the world’s reserves. And for nickel, Canada extracts 6% and Brazil holds 17% of reserves. We must point out that this report has not adequately documented the serious mining conflicts that are occurring in Brazil, which can be seen in the interactive map attached to this report.

Below are the 25 cases documented in this report, with specific mention of social and environmental injustices attributed to each case.

[2] MAP OF MINING CONFLICTS TIED TO THE ENERGY TRANSITION IN THE AMERICAS

For this report, 25 cases were documented and mapped. There are many other conflicts listed in the Environmental Justice Atlas and other reports examining conflicts in the region and around the world. These case studies were developed between local activists, local organizations, and members from the EJAtlas and MiningWatch Canada teams. We jointly documented and mapped the case studies in accordance with the Environmental Justice worksheets¹².



Source: Prepared by Yannick Deniau based on EJAtlas data, with a map based on Natural Earth.

¹² Temper, L., Del Bene, D., Martínez-Alier, J., (2015). "Mapping the frontiers and front lines of global environmental justice: The EJAtlas". The Journal of Political Ecology 22, 256.

The following table shows information about the 25 documented cases, the name of the project, its location, the mining companies involved in these projects and their current status (in operation, in construction, etc.). It also mentions the organizations who participated in the collaborative documentation process.

TABLE OF THE 25 CASES DOCUMENTED IN THE AMERICAS

| PROJECT NAME OR CONFLICT | | COUNTRY | COMPANY(IES) RELATED TO THE MINING PROJECT | MINERAL | PROJECT STAGE | CASE DEVELOPMENT COLLABORATORS |
|--------------------------|------------------------|----------------|---|-------------------------------------|-------------------|---|
| 1 | Matawinie | Quebec, Canada | Nouveau Monde Graphite (Canada) | graphite (principal) rare earths | In construction | Coalition des Opposants à un Projet minier en Haute-Matawinie (COPH) |
| 2 | Authier | Quebec, Canada | -Sayona Mining Limited (Australia) -Sayona Québec inc (Canada) subsidiary of Sayona Mining | lithium | Planned | Comité citoyen de protection de l'esker (CCPE) and Regroupement vigilance mine de l'Abitibi-Témiscamingue (REVIMAT) |
| 3 | Tansim | Quebec, Canada | -Sayona Mining Limited (Australia) -Sayona Québec inc (Canada) subsidiary of Sayona Mining | lithium | Planned | Comité citoyen de protection de l'esker (CCPE) and Regroupement vigilance mine de l'Abitibi-Témiscamingue (REVIMAT) |
| 4 | North American Lithium | Quebec, Canada | -Piedmont Lithium Inc. (USA) and Sayona -Mining Limited (Australia) | lithium | In construction | Regroupement vigilance mine de l'Abitibi-Témiscamingue (REVIMAT) |
| 5 | Miller | Quebec, Canada | Canada Carbon (Canada) | graphite and marble | Exploration stage | Groupe citoyen SOS-Grenville-sur-la-Rouge |
| 6 | Thacker Pass | USA | -Lithium Americas (Canada) -Lithium Nevada Corporation (USA) | lithium | Planned | Great Basin Resource Watch |
| 7 | Sonora Lithium | Mexico | -Bacanora Lithium (UK) -Ganfeng Lithium Co (China) | lithium | In construction | Red Mexicana de Afectadas/os por la Minería (REMA) ("Mexican Network of People Affected by Mining") |
| 8 | Cobre Panamá | Panama | -First Quantum (Canada) -Minera Panamá (Panama) subsidiary of First Quantum | copper | In operation | Movimiento Panamá Vale Más Sin Minería (PVMSM) ("Panama is Worth More Without Mining") |

| PROJECT NAME OR CONFLICT | | COUNTRY | COMPANY(IES) RELATED TO THE MINING PROJECT | MINERAL | PROJECT STAGE | CASE DEVELOPMENT COLLABORATORS |
|--------------------------|---|---------|--|--|---------------------------------------|--|
| 9 | Warintza | Ecuador | -Solaris Resources Inc (Canada) -Lowell Mineral Exploration Ecuador S.A. (Ecuador) subsidiary of Solaris Resources Other companies in Shuar territory: -SolGold (Australia) -ExplorCobres S.A. EXSA (China and Canada) -Aurania Resources (Canada) -Salazar Resources (Canada) | copper (principal) molybdenum, gold | Advanced exploration stage | Pueblo Shuar Arutam (PSHA) ("Shuar Arutam People"); Asociación Latinoamericana para el Desarrollo Alternativo ALDEA; AmazonWatch; Consorcio TICCA; Fundación Tiam; Lluviacomunicación; Witness |
| 10 | Llurimagua | Ecuador | -CODELCO (Chile) -Empresa Nacional Minera del Ecuador -ENAMI (Ecuador) | copper, molybdenum | Halted | Defensa Ecológica y Conservación de Intag (DECOIN) ("Ecological Defence and Conservation of Intag"); Rainforest Information Centre |
| 11 | Constancia | Peru | Hudbay Minerals (Canada) | copper (principal) gold, silver, molybdenum | In operation | Derechos Humanos Sin Fronteras (DHSF)-Cusco ("Human Rights Without Borders-Cusco"). |
| 12 | Macusani / Falchani | Peru | -American lithium (Canada) -Macusani YellowCake SAC (Peru) subsidiary of American Lithium | uranium / lithium | Planned | Red Muqui and Derechos Humanos y Medio Ambiente (DHUMA) ("Human Rights and Environment"). |
| 13 | potassium chloride plant and lithium-carbonate industrial plant | Bolivia | -Yacimientos de Lito Bolivianos- YLB (Bolivia) | -potassium chloride -lithium-carbonate | In operation / In construction | -Pablo Poveda - Bolivian researcher specialized on lithium mining -Centro de Estudios para el Desarrollo Laboral y Agrario (CEDLA) («Center for Development, Labor and Agrarian Studies») |
| 14 | Las Vizcachitas | Chile | -Los Andes Copper (Canada) -Vizcachitas Holding (Chile) subsidiary of Los Andes Copper | copper-molybdenum (principal) silver | Planned | Agrupación Putaendo Resiste ("Putando, Resists!") |

| PROJECT NAME OR CONFLICT | COUNTRY | COMPANY(IES) RELATED TO THE MINING PROJECT | MINERAL | PROJECT STAGE | CASE DEVELOPMENT COLLABORATORS | |
|--------------------------|--|--|--|---|--------------------------------|---|
| 15 | Quebrada Blanca and Quebrada Blanca phase 2 (QBF2) | Chile | -Teck Resources Limited (Teck) (Canada) -Compañía Minera Quebrada Blanca S.A (QBSA) (Chile) subsidiary of Teck -Sumitomo Metal Mining Co., Ltd. and Sumitomo Corporation (Japan) -Empresa Nacional de Minería (ENAMI) (Chile) | copper, molybdenum (principal) silver (and other) | Expansion | Observatorio Latinoamericano de Conflictos Ambientales (OLCA) («Latin American Observatory of Environmental Conflicts») |
| 16 | Atacama salt flats | Chile | -Rockwood Lithium Limitada (Rockwood Lithium) (USA) -Albermarle Corporation (Albermale) (USA) -SQM (Chile) -Wealth Minerals (Canada) | lithium | In operation | Observatorio Plurinacional de Salares Altoandinos (OPSAL) («Plurinational Observatory of Andean Salt Flats») |
| 17 | Coipasa salt flats | Chile | Lithium Chile Inc (Canada) | lithium | Planned | OPSAL |
| 18 | Punta Negra salt flats | Chile | -BHP Billiton (BHP) (UK) -Minera Escondida Ltda (Chile) subsidiary of BHP Billiton -Rio Tinto (Rio Tinto) (UK). -Jeco Corporation (Japan) -JECO 2 Ltd (UK) | copper | In operation | OPSAL |
| 19 | Minera Agua Rica and Minera Alumbrera (MARA) | Argentina | -Yamana Gold (Canada) -Glencore (Switzerland) -Newmont (USA) -Yacimientos Mineros Agua de Dionisio-YMAD, interstate company (Argentina) | copper, molybdenum, gold, silver | Planned | Asamblea el Algarrobo ("El Algarrobo Assembly"); Diálogo 2000 |
| 20 | Salinas Grandes salt flats | Argentina | -Dajin Resources corp. (Canada) -Ekeko S.A (Argentina) -Jujuy Energía y Minería Sociedad del Estado- J.E.M.S.E (Argentina) -Advantage Lithium (Canada) | lithium | In exploration | Fundación Ambiente y Recursos Naturales (FARN) ("Environment and Natural Resources Foundation") Dra. Lucrecia Wagner (CONICET) |
| 21 | Las Tapias | Argentina | -Pampa Litio S.A (Australia) -Dark Horses (Argentina) | lithium | Halted | Cecilia Cerruti, Foro Ambiental de Traslasierra ("Environmental Forum Traslasierra") |

| PROJECT NAME OR CONFLICT | | COUNTRY | COMPANY(IES) RELATED TO THE MINING PROJECT | MINERAL | PROJECT STAGE | CASE DEVELOPMENT COLLABORATORS |
|--------------------------|------------------------------------|-----------|---|---------------------|-------------------------------------|---|
| 22 | Tres Quebradas | Argentina | -Zijin Mining Group Co. Ltd (China) ¹³ -Liex S.A (Argentina) | lithium | In operation | Asamblea Fiambalá Despierta ("Wake up Fiambalá! Assembly"); Fundación Yuchan |
| 23 | Salar del Hombre Muerto salt flats | Argentina | -Livent (USA) -Alpha Lithium (Canada) -Galaxy Resources/Orocobre (Australia) -Posco Minería Santa Rita S.R.L (Argentina) -Galan Lithium (Australia) -Allkem (Australia) Lithium South (Canada) Kestrel Gold INC (Canada) | lithium | In operation | Asamblea ANTOFAGASTA RESISTE, P.U.C.A.R.A (Pueblos Catamarqueños en Resistencia y Autodeterminación) ("Catamarca's People, Resistance and Self-Determination") Fundación Yuchan OPSAL |
| 24 | Olaroz-Caucharí salt flats | Argentina | (Olaroz-project) -Orocobre (Australia) -Toyota Tsusho (Japan) -Jujuy Energía y Minería Sociedad del Estado- J.E.M.S.E (Argentina) -Sales de Jujuy S.A. (Argentina) subsidiary of Orocobre, Toyota and J.E.M.S.E (Cauchari-Olaroz-project) -Lithium Americas (Canada) -Ganfeng Lithium Co (China) -Minera Exar (Argentina) subsidiary of Lithium Americas and Gangfeng | lithium / Potassium | In operation In construction | Observatorio de Conflictos Mineros de América Latina (OCMAL) ("Observatory of Mining Conflicts in Latin America"); Dr. Lucrecia Wagner |
| 25 | Ancasti | Argentina | -Lake Resources NL. (Australia) -Latin Resources S.A. (Argentina) | lithium | In exploration | Asamblea de Ancasti por la Vida ("Ancasti por la Vida Assembly"); P.U.C.A.R.A |

¹³ Zijin Mining Group Co. Ltd acquired Neo Lithium in October 2022.

[3]

THE IMPACTS OF «GREEN» MINING AND THE SOCIAL MOVEMENTS ORGANIZING IN RESISTANCE

Large-scale mining, whether for the energy transition or other purposes, is an activity that has an enormous socio-environmental impact. In fact, it is the activity with the highest number of conflicts registered in the Environmental Justice Atlas and, according to Global Witness, is among the activities associated with the highest number of murders of environmental defenders around the world.

Energy transition policies are expanding the frontiers of extraction into fragile and little-known ecosystems such as salt flats (salares) and high Andean lagoons (lagunas altoandinas), while increasing extractive pressures on sensitive and biodiverse areas and ecosystems such as the Amazon, rainforests, lagoons, valleys and mountains. This process is done hastily, without any respect for environmental rights or for the rights of the communities who live in these territories. The world will face unprecedented levels of mining if the projected demand continues, resulting in alarming environmental, social, economic, and cultural impacts and potentially threatening the capacity of the affected ecosystems to regulate the climate.

In this section, we outline some issues highlighted by communities fighting against the extraction of critical minerals and metals in the Americas: the impacts on ecosystems, biodiversity and water (fragile ecosystems, the impact related to the generation of enormous volumes of mining waste) and impacts on communities (the lack of participation and information sharing processes, the cultural impacts and the violence with which extraction is being driven).



Protest in Panama City against
open-pit mining (2021).
Photo: CIAM Panama

3.1 IMPACTS ON ECOSYSTEMS, BIODIVERSITY AND WATER.

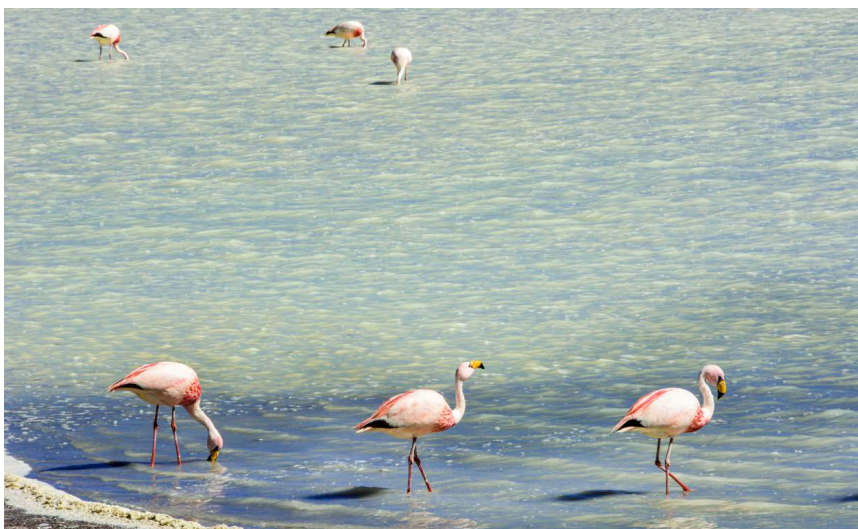
Impacts on fragile and (un)protected ecosystems

The movements and communities who are organized in opposition to these “strategic” projects, state that mining is being rolled out in fragile (the Amazon, glaciers, etc.) and often poorly-studied ecosystems (i.e. lagoons and high Andean wetlands, salt flats), as well as forests and valleys.

Potential impacts are not limited to the extraction site itself, but rather can extend to watersheds and affect endemic and endangered species, as well as impact the ecosystems’ global climate regulatory functions.

Many mining projects are advancing in protected sites, such as Ramsar Sites (Tres Quebradas, Argentina), biodiversity hotspots (Llurimagua in Ecuador, Thacker Pass in USA), biological corridors (Cobre Panamá in Panama), and national protected sites—protection measures that rarely fulfill their purpose. In many of the documented cases, mining is being carried out in the habitat of endemic or endangered species.

The copper-molybdenum Llurimagua Project (Intag, Ecuador), is located at the meeting point of two “hotspots” and threatens 20 endangered species who inhabit the region. Among them is one of the most threatened primates in the world – the brown spider monkey – as well as two species of frogs (longnose harlequin frog and confusing rocket frog), which are only found here and in one other location. In Chile, the residents of Putaendo denounce the high water demand of Las Vizcachitas project (copper, molybdenum) and its potential impact on ecosystems such as high Andean wetlands and over 100 “rock glaciers,” as well as endemic flora and fauna, pumas, condors, Andean cats and guanacos that inhabit the area.



Andean flamingos
threatened by lithium mining.
Photo: Germán Bernal

La laguna The Aparejos lagoon, located at the Ramsar and nesting site of Parina Grande, better known as the Andean or pink flamingo, would be affected by the Tres Quebradas lithium project (Catamarca, Argentina). The Thacker Pass lithium project (USA) threatens a highly-diverse ecosystem home to, among other species, the critically-endangered spring snail and King River pyrg, as well as Crosby's buckwheat (a rare desert flower that only grows in this area). This ecosystem is also the source of valuable ancestral medicinal knowledge for the People of the Red Mountain who inhabit the territory. In Panama, communities are organizing against the granting of mining concessions totalling 25,599.72 ha, Cobre Panamá open-pit copper mine, situated mostly within the Donoso protected area, which is part of the Mesoamerican Biological corridor.

Impacts on fragile and (un)protected ecosystems that regulate our global climate

The extractive frontier – which is not limited to metalliferous mining, but includes the extraction of fossil fuels and deforestation also associated with mining¹⁴ – is expanding rapidly in the Amazon, which is a key ecosystem for global climate regulation.

In fact, a recent study shows that the Amazon is going from being a net greenhouse gas collector (sink) to being a net emitter of these gases due to deforestation and climate change¹⁵. Our report documents the struggle of the Shuar Arutam People (PSHA) against copper and molybdenum exploration and exploitation in the Warintza Project, and the defense of their ways of life, worldviews and territory in the Ecuadorian Amazon. According to Josefina Tunki, PSHA's president: *"We have a unique territory which is the Amazon. We know that the rivers we drink from all come from the mountain ranges and that our biodiversity depends upon them... We protect all of that... and we know that it contributes to the protection of the planet."*¹⁶

Among the mapped cases are extractive projects located in glacial and periglacial areas. For example, in Peru, the connected projects of Falchani (lithium) and Macusani (uranium) are causing concern among Indigenous and small farmer communities, as well as the local organizations in Puno, due to a lack of regulatory frameworks to properly manage lithium-uranium mines and potential risks to health and the environment. Communities also report that there are additional concessions located around these projects and on top of the Quelccaya glacier – the biggest tropical glacier in the world at over 5,600 meters above sea level. The waters of Quelccaya feed rivers, lagoons and

¹⁴ Zoe Sullivan. (2017). "Mining activity causing nearly 10 percent of Amazon deforestation". Mongabay. <https://news.mongabay.com/2017/11/mining-activity-causing-nearly-10-percent-of-amazon-deforestation/>

¹⁵ Luciana Gatti et al. (2021). "Amazonia as a carbon source linked to deforestation and climate change". Nature. <https://www.nature.com/articles/s41586-021-03629-6>

¹⁶ Personal Communication. EJAtlas/MiningWatch Canada (August 2021). "Proyecto minero Warintza de Solaris Resource Inc., Ecuador". <https://ejatlas.org/conflict/la-lucha-del-pueblo-shuar-arutam-psha-contra-solaris-resources/?translate=en>

*There are mining concessions of the Falchani (lithium) and Macusani (uranium) projects around and on top of the Quelccaya glacier (Puno, Peru).
Photo: DHUMA, Puno*



streams that provide water to the people who live around the mountains, and sustain the biodiversity of the area. Furthermore, this glacier is the main source of water of the Vilcanota River, which provides over 50% of the drinking water in the Cusco region and provides hydroelectric power to Puno, Cusco and Apurímac in the dry season. It is also a tributary of the Amazon River.

Moreover, lithium mining is quickly advancing in fragile, little-studied ecosystems such as the salt flats. Salt flats are found in dry climates and are often referred to as “unproductive deserts.” Nonetheless, salt flats are not only the ancestral territories for many cultures, but they also play a role in regulating the climate in its basins. The negative effects of years of over-exploiting water and minerals is already visible, which is further explored in the following section.

In defense of water (and life)

Mining is a water-intensive activity that generates enormous waste, which presents a short- and long-term risk to the quality of the water (acid leachate, leaks, etc.).

All of the struggles mapped in this project talk about the risks mining poses to this vital element for people’s lives and ecosystems.

Lithium mining, especially in brine, requires an intensive extraction of water, which contains the sought-after minerals. Many consider this **water mining**. Studies carried out at the [Atacama salt flat](#) report that, “In order to produce a ton of lithium, 2 million liters of water are evaporated from the wells. That’s 2,000 tons of water that cannot be recirculated” and that, at this rate of extraction, the water will be difficult to recover. It is estimated that over 226 million liters of water are pumped daily in the whole of

the water basin¹⁷. By extracting brine, fresh water from the peripheral groundwater is displaced to fill up what was extracted. It then mixes with the salt water and becomes saline for good, damaging the freshwater sources of the water basin¹⁸.

Intense lithium extraction in the Atacama Salt Flat has positioned Chile as the world's second producer of this mineral. Nonetheless, the local population reports that the waters of the salt flat basin are decreasing, there are fewer birds and protected fauna, and the floodplains and wetlands that were grazing areas for animals are drying up. The Atacama Salt Flat is an ecosystem with enormous ecological, patrimonial, cultural, and symbolic value. It is located in the Antofagasta region of the Andes mountains, with an approximate surface area of 3,000 square kilometers. The lagoons that are part of the salt flat constitute a source of supply for the endemic fauna that dwells there, especially the Andean, James and Chilean flamingos.

Furthermore, runoff from the tributaries generated in the salt flat provide water for Indigenous communities adjacent to the salt flat, such as the communities of Peine, Socaire, Toconao, and to the north, the communities of San Pedro de Atacama. The water supply in the salt flat is crucial to life in these areas and to the overall health of the water basin. As the Indigenous Association Council for the Atacaman Peoples states: "... *we will continue relevant actions to stop this lithium project from going forward within the*



Uyuni Salt Flat (Bolivia).
Photo: Adriana Montes
Sánchez

¹⁷ Sustainable Chile. (2019). "Cada tonelada de litio requiere la evaporación de 2 mil litros de agua" (Each ton of lithium demands the evaporation of 2 thousand liters of wáter). In OCMAL. <https://www.ocmal.org/cada-tonelada-de-litio-requiere-la-evaporacion-de-2-mil-litros-de-agua/>

¹⁸ Emiliano Gullo, Ezequiel Fernández. (2020). "Oro blanco: la violenta disputa por el agua en Argentina" (White gold: the violent conflict over water in Argentina). Diálogo Chino. <https://dialogochino.net/es/actividades-extractivas-es/35354-oro-blanco-la-violenta-disputa-por-el-agua/>

salt flat, because we know this territory is already overexploited. They pump out five times more water than what comes in. What's more, they want to mine only a few kilometers away from the Tebenquiche Lagoon, which is a nature sanctuary"¹⁹.

In Argentina, the Tres Quebradas lithium project is in the Ramsar-designated site "High Andean and Puneñan Lagoons of Catamarca," where lithium extraction in salt flats is advancing in spite of the fact that Indigenous communities and various neighborhood and community assemblies in the region, including the Fiambalá Despierta Assembly ("Wake up Fiambalá"), have expressed the need to conduct hydrogeologic and modeling studies of the basin. The area is home to a system of interconnected lagoons and salt flats. Here, extensive mining activities may negatively affect other sectors of the same basin, given the unknowns around the superficial and underground water systems. Despite the lack of hydrogeomorphological studies, and the imprecise data about the existence and possible impact on the basin's freshwater, the project's environmental assessment was approved in 2021.

Furthermore, Indigenous Atacameñas and Kollas communities who inhabit the Salinas Grandes Basin and Guayatayoc Lagoon have expressed concerns over possible effects of lithium extraction on the ecosystems in the salt flats. They warn that intensive water usage could lead to severe desertification in an already highly-dry ecosystem, preventing the continued survival of the community in the basin and forcing them to migrate elsewhere. The disheartening experiences in other salt flats have sounded alarm bells.



Mobilization of the Atacama Citizens Movement Somos Todos (2019).
Photo: Movimiento Ciudadano Atacama Somos Todos

¹⁹ Cristian Flores et al (2021). "Inversiones Canadienses de Lito en Chile: Extractivismo y Conflicto" (Canadian Lithium Investments in Chile: Extractivism and Conflict). OPSAL, MiningWatch Canada and Beyond Extraction. <https://drive.google.com/file/d/1zmp-puM7rGSXilmZWRoba2tjhhkUwPspb/view>

In the United States, communities and agricultural producers report that the Thacker Pass lithium mining project aims to extract approximately 9% of the water available in the basin, where water is already scarce. In Sonora, Mexico, the lithium mine plans to use 1.41 million cubic meters of water per year to extract lithium from an area with scarce water resources and which has suffered extreme drought for the past year.

In Bolivia, a potassium chloride plant is in operation and a lithium carbonate plant is being built in an area with severe water shortages. Less than a quarter of the homes in Colcha K (one of the closest municipalities to the plants in the Uyuni salt flats) have access to basic sanitation, while just over half have access to potable drinking water. This is compounded by the fact that the region is under pressure from the intensive exploitation of water in San Cristóbal, the largest mine in Bolivia. Local organizations report their “concern for the subterranean water required for this type of mining extraction, and for the lack of information about this economic activity being planned for the future of these territories”²⁰.

At Andalgalá, Argentina, el Algarrobo Assembly opposes the consolidated Agua Rica and La Alumbreira (MARA) copper-molybdenum project. The resistance to exploration and exploitation of the Agua Rica deposit is due to its impact on water, the emission of tons of carbon dioxide (unquantified in the Environmental Impact Assessment) and the direct impact on glacial and periglacial environments located in the Aconquija

Public demonstration next to the Saint-Mathieu-Berry Esker water source, in front of the Sayona-Authier mine site (10/02/2019, Quebec, Canada). Photo: The sign states “Millennia to build it, 18 years to destroy it”.



²⁰ Bárbara Jerez. (2018). “Impacto socioambiental de la extracción del litio en las cuencas de los salares altoandinos del cono sur” (Socio-environmental impact of lithium extraction in the basins of High Andean salt flats in the Southern Cone). OCMAL. <https://www.ocmal.org/wp-content/uploads/2018/08/Impacto-Sociambiental-Litio.pdf>

mountain range²¹. Communities in Andalgalá report how mining extraction at La Alumbra (that will provide the infrastructure to process Agua Rica resources located 35 kms away), in operation for 20 years, has caused environmental degradation and has led to the contamination of water resources, reducing the lands fit for agriculture. The water shortage in the region has even led to prolonged and frequent drinking water shortages. The authorities have declared a water, environmental and agricultural state of emergency several times (2012, 2016, 2020) in the province of Catamarca. Despite the critical water shortage, "The company will consume 300 million liters per day, more than six times what the 12,600 inhabitants of the town consumes," according to El Algarrobo Assembly. The resistance movement against Alumbra and Agua Rica's mining reservoirs is over 20 years old.

Areas with an abundance of good quality water are also concerned about the advancement of mining. The Authier lithium project (Canada) is 20 meters away from the natural site of Esker Saint-Mathieu-Berry (a subterranean river). In 2001, this water source obtained the prestigious recognition as the "best water in the world." The Saint-Mathieu-Berry esker is a natural filter inherited from the retreat of the glaciers millennia ago and has a subterranean river of exceptionally pure water. "Water is worth more than lithium," "Money cannot be drunk, but the esker's pure water can!" "Millennia to build it [the esker], 18 years to destroy it," "To say the Titanic was unsinkable is akin to saying the esker is not in danger," have been some of the mottos used by its defenders.

Some documented cases are already showing effects on the water. The copper projects Warintza (Amazon) and Llurimagua (Intag cloud forests) in Ecuador are located in rainforest ecosystems, where it is very difficult to contain water contamination. Sediments, leachates, and other discharges pose serious consequences for the whole water basin and all those who inhabit it. The impact of mining exploration on water is often visible.

Comunidades afectadas por el proyecto North American Lithium (NAL), en Canadá, Communities affected by North American Lithium (NAL) in Canada report that in spite of significant expansion in the exploitation of lithium, which increased by 45.2% between 2010 and 2018, no relevant hydrogeological studies have been carried out to determine the impacts of the mine. There are significant concerns for the mine's impacts on subterranean waters and the region's ecosystems. The mine has already emitted toxic pollutants into the environment. A compilation of 83 emergency reports from the mine between March 13, 2013 and September 9, 2018, report the spilling of over 50 million liters of mine tailings, antifreeze, diesel, oil and contaminated water. Communities from Chamaca (Chumbivilcas, Peru) report serious impacts on the environment and water sources from mining at La Constancia copper project. Significant changes to the Andean ecosystem have been identified in the Sayawaloma mount and in dry wetlands,

²¹ Mariana Katz et al. (2021). "Andalgalá: de la armonía y la paz, a la ruptura del tejido social y violación de derechos por la actividad minera. La incansable búsqueda de la autodeterminación" (Andalgalá: from harmony and peace to the destruction of the social fabric and rights violations due to mining activity. The relentless search for self-determination) Revista Servicio Paz y Justicia América Latina Nro. 003 October-December 2021. <https://serpaj.org.ar/revista-serpaj-latino-america-n3/>



*Water contaminated during
exploration activities,
Llurimagua project, Intag,
Ecuador (cloud forest).
Photo. Carlos Zorilla, 2018.*

while the Macaray Chiloroya River has been contaminated from dumping residual water and sewage from mining operations.

In this sense, La Escondida mine in Chile is a landmark case. BHP Billiton owns the project and has provoked “continuous, permanent, cumulative and irreparable” damage to the underground aquifer of the Punta Negra Salt Flat. After 27 years extracting water from the salt flat for its copper mine (until 2017), “the levels of the salt flat aquifer diminished to such a point that the wetlands and all the vegetation surrounding it dried up. A large proportion of the fauna that inhabited it disappeared as it lost its habitat.”²²

²² Michelle Carrere. (2021). “Chile: ¿Es muy tarde para salvar el salar de Punta Negra?” (Chile: Is it too late to save Punta Negra salt flat?). Mongabay. <https://es.mongabay.com/2021/06/chile-salvar-el-salar-de-punta-negra/>

Large-scale mining and increased waste. “Green” mines that are anything but green.

Despite being presented as “green” or “climate-smart,” many of these projects are no different in size, nor in mineral processing techniques, management or community relations, than large-scale mines operating on the continent to extract “traditional” minerals, such as gold, silver or even copper. Many of these mines have already provoked serious socio-environmental impacts. For example, some of the lithium or graphite projects analyzed in this study are using strip mining techniques.

Strip mining requires the extraction of significant quantities of materials. Only a fraction of these materials are processed (requiring large quantities of water, chemicals and energy) to obtain small amounts of metals and minerals.

Both in the region and globally, there is a reduction of ore grades (concentration) of metal deposits, which means that in order to obtain small quantities of metals, increasing amounts of resources are used and increasing amounts of waste are generated. Thus, mining generates large volumes of waste, which is disposed of with varying degrees of protection near the mine. The extraction of raw materials causes serious environmental and social impacts.

The surrounding area is irreversibly changed, while significant amounts of mine tailings and wastewater are generated. Waste and tailings contain various toxic and heavy metals that when exposed to oxygen, ambient temperatures and humidity, trigger other processes of contamination (leachates) that, in the short or long-term, can contaminate the soil and surface and underground water sources, causing irreparable harm to health and the environment. Countries such as Chile, Australia, United States, Canada and Mexico are already dealing with serious environmental liabilities resulting from decades of mining.

The Australian company Sayona Mining aims to build an open-pit mine that is one kilometer long, 600 meters wide and 225 meters deep (total surface area of 60 ha). The [Authier lithium project](#) in Quebec, Canada, will generate over 60 million tons of mining waste. In the same province, Canadian mining company Nouveau Monde Graphite aims to exploit the largest graphite mine on the continent, the [Matawinie mine](#), which involves an open-pit mine that is 2.7 kilometers in length, 430 meters wide and 230 meters deep (116 ha). To produce 100,000 tons of graphite concentrate a year, the mine will have to extract almost 2.3 million tons of raw materials yearly due to poor ore grades (4% graphite), while generating a total of 100 million tons of mine waste during the mine’s 26-year life cycle.

The [Thacker Pass lithium project](#) in Nevada (USA), is an open-pit mine 1.6 kilometers in length, by 3.2 kilometers wide. The company plans to use up to 5,800 tons of sulphuric acid daily (for mineral processing), consuming 11,300 gallons of diesel per day and generating 152,703 tons of equivalent emissions of carbon dioxide each year.



*Myths and realities of open-pit “green”
or “climate-smart” mines
Photo on the left: “Climate-smart mining:
minerals for climate action.”*

*World Bank program
Photo on the right: The Los Filos open-pit mine,
Guerrero, Mexico. Cristian Leyva, 2014.*

The Sonora Lithium mine in Mexico will also be open-pit (129 ha) and will generate 131 million tons of waste and 25 million tons of wet tailings during the 20 years of production.

Communities are organizing to confront the impacts this mining waste is having on their environments and their health. The Citizens’ Committee SOS Grenville-sur-la-rouge (Quebec, Canada) denounces the lack of information about the impact that exposure to graphite dust in the air from the Miller graphite project may cause to the health of the population, such as graphite pneumoconiosis – a serious, incurable respiratory illness similar to asbestosis. Similarly, according to the Foro Ambiental de Traslasierra (Environmental Forum of Traslasierra) the lithium to be extracted from hard rock at the Las Tapias project in Las Tapias, Córdoba, could produce high levels of dust and debris contaminating the air and the water, while seriously harming the health of local communities. These solid and chemical wastes would also cause problems for the environment and destroy sensitive ecosystems such as the Traslasierra Valley – a tourist spot that houses half of the province’s native forests. In 2019, the lack of information about this project led to a people’s protest, which managed to ban large-scale mining in the area and halted the project.

These examples show that it does not matter how much the extraction of these metals and minerals are spun as being “green.” Extracting lithium or graphite, instead of gold, silver or coal, does not make these projects any greener or more sustainable. These projects use enormous quantities of water, materials, and energy and generate significant quantities of mining waste. There is a lack of clarity and much uncertainty about the management and treatment of mining waste, especially in the long-term. Waste is typically buried, becoming a “ticking time bomb” for centuries.

Cumulative impacts of mining.

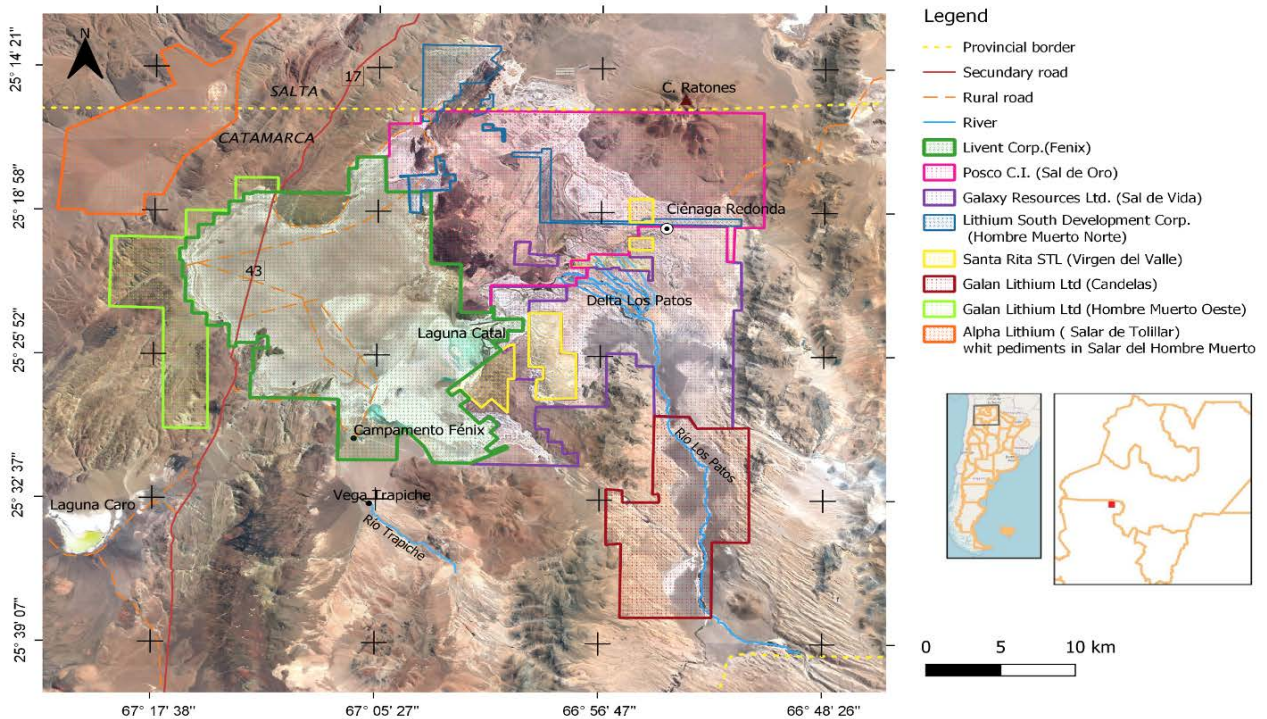
The concern regarding the impacts of mining on ecosystems, bodies of water and local communities is not only limited to individual projects, but also relates to the cumulative impact of all mining projects planned for the territory.

For example, communities and organizations concerned about the advancement of intensive lithium extraction by way of several projects in the Hombre Muerto Salt Flat (Salar del Hombre Muerto, Argentina) have documented all the lithium mining concessions and projects in this salt flat (see figure below). They report that despite evidence documenting already-visible impacts on water availability at the basin, permits to widen and open new lithium mines continue to be granted.

While environmental studies do not take into account the cumulative impact that various mining projects have on the water in the basin, communities do perceive when ecosystems dry up, animals migrate and/or die, and the environment which sustains life is disrupted.

MINING CONCESSIONS IN THE HOMBRE MUERTO SALT FLAT

Fig.4



Source: Fundación Yuchan, 2021

A more comprehensive view of the territory and the region should also take into account transportation infrastructure (roads, power lines, ports, etc.), processing, waste, emissions and related impacts. Mining and the related activities have also been linked to deforestation.

3.2 ADVERSE IMPACTS ON COMMUNITIES AND THEIR RIGHTS.

Impacts on livelihoods.

As stated in previous sections, mining entails a potential and, in many cases, a tangible risk for the communities' livelihoods and ways of life. In many cases, there are harms caused to agricultural lands and to the subsistence of local economies. For example, in Bolivia, in the southwest of Potosí near the Uyuni salt flat, lithium projects are threatening tourism, llama rearing, and cultural practices, such as the collection of roots, plants and herbs, while further disrupting communities whose livelihoods depend on these activities. Similarly, in the Coipasa salt flat (Chile), very close to Uyuni salt flat, the Ancovinto Aymará community is concerned about water and the potential effects of mining on quinoa crops and llama rearing, given the dry nature of the territory: *"We defend our Indigenous community and we will keep defending it to stop it from being pillaged, exploited and contaminated by lithium extraction."*²³



The lithium industry affects llama rearing, the livelihood of communities around Uyuni salt flat (Bolivia). Photo: Germán Bernal

²³ Nikolaj Houmann. (2021). "Indigenous peoples face charges as they resist future lithium projects across Chile" Electronica Justa./Fair Electronics <https://electronicajusta.net/portfolio/els-pobles-indigenes-senfronten-a-carregues-mentre-resisteixen-futurs-projectes-de-liti-a-tot-xile/?lang=en>

Impacts on traditional knowledge and cultural heritage / sacred places.

A significant part of documented conflicts are taking place in territories belonging to Indigenous peoples, in both the north and south of the American continent. Mining projects create tension and can deeply affect the communities' relationship with their territories.

In some cases, mining negatively impacts cultural heritages that are thousands of years old. In Putaendo, Chile, the Las Vizcachitas mining project threatens over 1,300 petroglyphs, Inca trails and pucarás (fortresses). The communities who organized against the Matawinie graphite project around Taureau Lake (Quebec, Canada) report impacts on the archeological cultural landscape, the natural heritage and the lake's tourist spots.

In Peru, cave paintings from various historical eras are under threat at Macusani and Corani, as well as sacred sites for communities in Potosí in Bolivia, the Pueblo Shuar Arutam in Ecuador and People of the Red Mountain in the United States.

The Tansim open-pit lithium mine (Quebec, Canada) is located north of lake Simard on the unceded territory of the Long Point First Nation community (LPFN). The community is concerned that lithium extraction will contaminate water sources near the Ottawa River, violating their rights as Indigenous peoples to hunt, forage for food and medicines – all activities which have important values for their culture, history, and identity. The community, who had already been displaced from their territory to build a hydroelectric megaproject, reports that they have already been “sacrificed” and that, due to this lithium project, they are once again “in a battle for [their] homes, lives, livelihoods, and survival.”²⁴

The Falchani (lithium) and Macusani (uranium) projects threaten cave paintings in Macusani (Peru).
Photo: DHUMA- Puno



²⁴ Change.org. “Stop the Soyona lithium mine on Lac Simard - Long Point First Nation”. <https://www.change.org/p/government-of-canada-stop-the-soyona-lithium-mine-on-lac-simard-long-point-first-nation-47960e76-e161-40bb-a1b5-1d5ca0900bed>

*The Sayona-Tansim mining project threatens Lake Simard, animals and vegetation and the ways of life for the Long Point First Nation (Quebec, Canada).
Photo: Steeve Mathias.*



Lack of information, participation, or respect for consultation and consent from Indigenous peoples.

A recurring theme in the documented mining conflicts is a lack of information provided to communities – and in some cases, outright omissions – as well as a lack of spaces for genuine participation. Company and government strategies to divide and intimidate communities in order to push forward and impose these projects have also been identified.

These behaviors are repeated throughout the continent. Mining activities are authorized and implemented in violation of environmental, mining, consultation and participation regulations. In the case of Indigenous communities, their right to free, prior and informed consent is often not respected. Thus, the advancement of “green” mining is being carried out in socially and environmentally unjust ways, deepening power imbalances and exacerbating inequalities.

In the documented cases, governments are granting mining concessions without adequately consulting those who inhabit the territory. For example, in 2016, Grenville-sur-la-rouge residents in Quebec, Canada, reported that the municipal council had made changes to the land use (from agricultural to mining) without giving proper notice or publicly consulting the population, thus favoring Canada Carbon, who planned to build the Miller graphite project. In response to the council’s decision, which was made in haste and without prior consultation, the community became organized and started the citizens Group SOS Grenville-sur-la rouge, to denounce the socio-environmental impact of the mine. Thanks to these organizing efforts, the committee succeeded in having the municipality reverse the decision. The following month, the company went on the offensive and sued the municipality for \$96 million.



Residents of Grenville-sur-la-Rouge (Quebec, Canada) say no to Canada Carbon's graphite mine (Quebec, Canada). Photo: SOS Grenville-

In Chile, Putaendo's residents successfully brought before the Supreme Court a case about the violation of their right to participation when the mining company ([Las Vizcachitas project](#)) drilled 350 holes in the Rocín river basin. This occurred after the Regional Environmental Assessment Commission authorized the drillings during a serious drought and in the midst of the COVID-19 health crisis. However, despite the court ruling against mining exploration and numerous protests, the project was approved in April 2021.

Lithium extraction in the [Hombre Muerto Salt Flat](#) (Argentina) has been advancing for years without ever having held the corresponding public hearings with the residents of Antofagasta de la Sierra, nor having obtained the free, prior and informed consent of the Atacameños del Altiplano Indigenous community who inhabit the salt flat ancestrally – a consultation right outlined in national and international law (ILO Convention 169).

Similarly, the Apacheta Collective of the Atakama People, who fight for their self-determination on their land, denounced irregularities in the environmental impact assessment for the lithium project in the [Olaroz Cauchari Salt Flat](#) (Susques, Jujuy, Argentina). The Collective made public their concern regarding the mine's water consumption and the lack of free, prior and informed consent of communities. The Collective asserts that the companies negotiated agreements with each community leader separately, and not with all the communities together, in order to sow division and avoid facing a concerted strategy.

The Nouveau Monde graphite project (Canada) affects the Nitaskinan ancestral territory of the Atikamekw First Nation, who were never consulted. Similarly, the Thacker Pass lithium project (USA) was authorized without consultation or consent from the Fort McDermitt Paiute and Shoshone Indigenous communities and other populations who could potentially be affected. The “management plan” for the mitigation of harms from mining to their cultural sites was developed without consultation, violating the rights of the tribes. The company also obtained various permits during the COVID-19 pandemic without those affected being able to access or fully participate in the public processes.



*Pueblos Catamarqueños
en Resistencia y
Autodeterminación
(P.U.C.A.R.A) Antofagasta
de la Sierra, Catamarca,
Argentina.
Photo: P.U.C.A.R.A*



*Atakama Peoples, Apacheta
Collective (Jujuy, Argentina).
Photo: Andean library
«Ñawpayachaykuna»*

Violence and criminalization.

According to the last Global Witness²⁵ (2020) report, “3 in 4 of the attacks [against environmental defenders] took place in the Americas” and most of these violent events were related to mining activities. Three quarters of the reported attacks against environmental defenders took place in the Amazon region in Brazil and Peru.

The cases documented in the EJAtlas reflect the various forms of violence carried out against communities who oppose the advancement of the extractive frontier in their territories. From violence carried out against living beings (such as water contamination), social impacts (such as the massive arrival of mine workers “man-camps”, a rise in alcoholism and prostitution), a lack of recognition of communities and their worldviews, as well as threats, intimidation, harassment, false accusations and legal complaints against defenders, as well as prosecutions and imprisonment resulting from legal proceedings with no due process.

The communities also report processes of cooptation and community division driven by those who promote mining. These are some of the diverse forms of violence that shape and mark the territories and those who inhabit them.

At Thacker Pass (United States), residents also point to the potential impacts of the flood of primarily male workers to the rural area that has a low population density, and the establishment of mining camps for the Thacker Pass lithium project. This migration could shift power relations, change the dynamics of recreation and the use of public spaces for girls and women, while increasing rates of alcoholism, prostitution and sexual exploitation.

In Chumbivilcas, Peru, the government (through the Attorney General’s Office), together with Hudbay Minerals and the Ministry of the Interior (*Ministerio del Interior*) have institutionalized the practice of filing charges against and prosecuting community leaders who peacefully protest against the environmental contamination caused by the Constancia copper project, and those leaders who insist that agreements and commitments to prior consultation be carried out.

The Shuar Arutam People (Warintza project, Ecuador), report that the Canadian company Solaris Resources has acted to intimidate and divide the community, ignoring their collective decision to reject copper extraction in their territories.

These actions include issuing a death threat to the President of the Shuar Arutam People via telephone. Furthermore, they report attempts to militarize the territory to advance the project.

²⁵ Global Witness.(2021). “Global Witness reports 227 land and environmental activists murdered in a single year, the worst figure on record”. <https://www.globalwitness.org/en/press-releases/global-witness-reports-227-land-and-environmental-activists-murdered-single-year-worst-figure-record/>



Protests in Chumbivilcas (Peru)
against Canadian company
Hudbay Minerals and its lack
of compliance with agreements.
Photo: Derechos Humanos Sin
Fronteras (DHSF) - Cusco

The communities in Andalgalá, Argentina, organized in the Assembly El Algarrobo, have firmly expressed that there exists no social license for any mining activity to take place in their territory. The local Assembly has carried out various direct actions to halt Yamana Gold's MARA project and to defend the Nevado del Aconquija and its water sources. As a consequence of these peaceful actions to halt the project, community members who are critical of large scale mining have been subjected to harassment at their places of work (both in private and public sectors), and have been subjected to searches, arbitrary detentions, and false criminal proceedings led by the provincial government and large scale mining companies such as Yamana Gold.²⁶ In 2021, 12 people were arrested in violent searches. In September 2021, five women who participated in a June sit-in against Yamana Gold were charged with "simple damage" for painting graffiti. Since 2010, a total of 70 residents have been taken to court for exercising their right to peaceful protest to defend the water. As one of the members of El Algarrobo Assembly reports, these types of allegations are "*intimidation tactics to silence social protest and advance with the project on our territory.*"²⁷

²⁶ Mariana Katz et al. (2021). "Cuando la Autodeterminación del Pueblo deja de ser una utopía. La experiencia de Andalgalá" (When the self-determination of the people ceases to be a utopia. The Andalgalá experience) Revista Tricontinental: Institute for Social Research. <https://thetricontinental.org/argentina/despojocaderno4-aav>

²⁷ ANRED. (2021). "Andalgalá: 5 mujeres imputadas por defender el agua y suman 17 los judicializados por oponerse a la megaminería" (Andalgalá: 5 women charged for defending water, now there are 17 people charged for opposing megamining). <https://www.anred.org/2021/09/28/andalgala-5-mujeres-imputadas-por-defender-el-agua-y-suman-17-los-judicializados-por-oponerse-a-la-megamineria/>

These various forms of violence carried out against communities and environmental defenders seek to intimidate and weaken them to silence their struggle and push forward mining projects in their territories. These practices are done in the name of “green,” “sustainable” or “climate smart” mining,” which we seek to problematize here.



Since 2010, members of El Algarrobo Assembly have carried out “Walks for Life” every Saturday in a peaceful manner to repudiate Yamana Gold. By August 2021, they had carried out 600 marches. (Catamarca, Argentina). Photo: Asamblea El Algarrobo

[4] “GREEN MINING” DISCOURSES

Mapping these case studies allows us to highlight the discourses being used by companies and governments who are using greenwashing tactics to advance with mining. Corporate and government actors have co-opted the discourse of the energy transition – a necessary reduction of greenhouse gas emissions to mitigate the climate crisis – to justify the expansion and intensification of mining, both in the North and the South. At the same time, mining companies greenwash their activities through social media, their websites and reports, while hiding the impacts of and struggles against mining – such as the violation of environmental regulations, the division and conflicts within communities, and police violence and repression, among other previously mentioned impacts.

It should be emphasized that communities and Indigenous peoples who oppose the projects documented as part of this report do not question the need to move towards an energy transition in order to mitigate climate change.

They argue against a mandatory, top-down and colonial energy transition in which some communities and territories are deemed fit for sacrifice, while leaving unanswered the most basic questions such as “energy for what”, “for whom” and “at what social and environmental cost?”

Below, we outline four recurring arguments that mining companies and governments use to promote “green” mining in the Americas and how these claims are being countered by the communities in the case studies:

THERE’S NO SUCH THING AS “SUSTAINABLE MINING”.

In the documented cases, companies and governments are promoting ideas such as “responsible”, “green”, “sustainable”, “ecological”, and even “climate-smart” mining. In almost all documented cases, mining corporations have incorporated voluntary frameworks such as Environmental, Social and Governance (ESG)²⁸ factors, the UN Sustainable Development Goals (SDG) and, in some cases like Teck Resources, they have even signed the Paris Pledge for Action, pledging that their operations will be carbon neutral by 2050. Nonetheless, company behavior in practice is far-removed from these pledges and goals, which is why communities claim that the greenwashing of mining activities is just a marketing ploy and a strategy to attract ethical investors.

²⁸ ESG factors are a set of rules that activist or ethical investors follow, including positive criteria over the type of projects that are sustainable and suitable to invest in given their “green” and “responsible” profile.

Mobilization against
Nouveau Monde Graphite's
Matawinie mining project
(Quebec, Canada).
Photo: Mobilisation
Matawinie Ekoni Aci



In Quebec, Canada, Nouveau Monde Graphite plans to develop the Matawinie project. The company has rolled out a social media campaign using rallying cries like “We have graphite, tons of graphite, millions of tons of graphite... we’re green, we’re excited and we’re ready.”²⁹ But the coalition of communities who oppose the Matawinie mining project (Coalition des opposants au projet minier Matawinie - COPH, in French) report, “the project, in its present form, is not ecological, sustainable, nor carbon neutral” and have produced a video to counteract the company’s false claims and instead, lift up the concept of “sustainable destruction.”³⁰

Similarly, Los Andes Copper, a Canadian company hoping to build the Las Vizcachitas copper project in Chile, states that it will produce “sustainable copper... for the green transition.”³¹ Nonetheless, Putaendo Resiste reports that the so-called “sustainable copper” the company is promoting would be exploited “by turning a valley, its community, and its ecosystem into a sacrifice zone.”³²

Teck Resources, a Canadian copper company that plans to expand the Quebrada Blanca project in Chile, emphasizes in its press releases its commitments to the fight against climate change – with actions that include signing the Paris Pledge for Action.

²⁹ Nouveau Monde Graphite. @NYSE_NMG (2021). https://twitter.com/NYSE_NMG/status/1370134811554234373?s=20&t=BCqKhyuU52TJ9BCuZ9CwMA

³⁰ Coalition des opposants au projet minier Matawinie - COPH (2021). Video: “Destruction durable” (Durable destruction). <https://www.youtube.com/watch?v=ILs93aee90M>

³¹ Los Andes Copper Ltd (2021). “Los Andes Copper Ltd receives final molybdenum assessment results and concentrate specifications for the Vizcachitas Project” <https://www.losandescopper.com/news/2021/los-andes-copper-ltd-receives-final-molybdenum-assessment-results-and-concentrate-specifications-for-the-vizcachitas-project/>

³² Personal Communication- EJAtlas/MiningWatch Canada (July 2021). “Proyecto Minero Las Vizcachitas, Chile”. <https://ejatlas.org/conflict/cobre-en-el-valle-de-putaendo-proyecto-vizcachitas/?translate=en>

QBF2 provocará
serios impactos para
el medio ambiente, los
pueblos indígenas, y los
trabajadores de la mina
(Tarapacá, Chile).
Foto: Miguel Hechenleitner



Yet the company was ordered to pay \$60 million in 2021 for contaminating the water with selenium and calcite in Elk Valley, British Columbia, where the company has its Canadian headquarters. This was the highest-ever fine imposed for violating the Federal Fisheries Act³³.

Likewise, communities affected by La Escondida copper mine (Chile), together with other affected communities in Brazil and Colombia, have on several occasions denounced BHP's "green" discourse by showing the real impacts of the company's operations. BHP Billiton endeavours to have a company policy around "sustainability," but nevertheless has recognized the impact that water extraction for mining has had on the subterranean aquifer in the Punta Negra Salt Flat. There are many concerns about the proposed remediation plan for the salt flat. Communities question budget line items, given that there is a lot more money assigned to disseminating results than to carrying out certain scientific studies in the first place. As a local resident puts it: "Why spend so much money on dissemination if the important thing is to recover the salt flat and study what really happened?" "Those funds are going to be spent cleaning up the company's image"³⁴.

It should be noted that these discourses and greenwashing tactics are being promoted by the big development banks such as the World Bank through a new fund "to achieve climate-smart, sustainable exploitation of minerals"³⁵.

³³ Ainslie Cruickshank. (2021). "Teck fined \$60 million for water pollution in B.C.'s Elk Valley". The Narwhal. <https://thenarwhal.ca/bc-teck-fined-60-million-selenium-fisheries-act/>

³⁴ Carrere 2021.

³⁵ World Bank. "New World Bank fund to support climate-smart mining for energy transition". <https://www.bancomundial.org/es/news/press-release/2019/05/01/new-world-bank-fund-to-support-climate-smart-mining-for-energy-transition>

THE CLIMATE CRISIS IS PRESENTED AS AN OPPORTUNITY FOR BUSINESS AND SPECULATION. A FALSE WIN-WIN.

“The company is in an ideal position to capitalize on the demand of metals and minerals to be used for technologies required for the energy transition.”

This is one of the phrases frequently used by the mining companies investigated as part of this report, in order to attract investors and sell them on the promise that their projects will remain profitable in the coming decades due to the urgency of shifting to renewable energies.

Within this context, mining is positioned as a key and essential activity in addressing the global environmental crisis and, therefore, a safe and “green” investment. Many of these companies emphasize in their corporate communications the high demand and scarcity of copper, lithium and graphite – metals needed for the electrification of the transportation sector – in order to highlight the company’s strategic role in providing these key materials for the energy transition.

Canadian mining company Dajin Lithium reports that its lithium project in the Salinas Grandes basin and the Guayatayoc Lagoon (Argentina) is a “green project,” emphasizing that *“there is greater interest in protecting the environment due to the continued fear about global warming.”*³⁶ Nonetheless, as Clemente Flores, spokesperson for the Indigenous Peoples’ Round Table for the Protection of the Guayatayoc Lagoon and Salinas Grandes Basin, the territory where the project is based says: *“The planet needs to consume cleaner energy. But why does it have to come at the cost of sacrificing regions of the planet? Right on our land?”*³⁷.

Communities of the Salinas Grandes basin and Guayatayoc Lagoon (Jujuy, Argentina). Still image taken from the documentary *En el Nombre del Litio* (“In the Name of Lithium”) (FARN), 2021.



³⁶ Dajin Lithium (2015. “The Lithium Revolution” infographic. In Visual Capitalist <https://www.visualcapitalist.com/the-lithium-revolution/>

³⁷ Calma Cine and Fundación Ambiente y Recursos Naturales (FARN) (2021). Documentary: “En el nombre del litio” (In the name of lithium). <https://enelnombredellitio.org.ar>

But it's not only companies and investors who are trying to capitalize on the discourses and related policies to address the climate crisis. Governments in both the North and South are also using these discourses to promote mining investment and development. In Mexico, the former undersecretary of mining in the Ministry of the Economy stated that, *"Without mining, there will be no energy transition"*³⁸ and that *"the mining sector is strategic for... [addressing] urgent matters about climate change."* In Chile, for example, the Senate organized events about "green" mining, stating: *"Chile, because of its copper and lithium, can help solve one of the most dramatic problems facing mankind, which is global warming... Chile could provide energy to the whole of humanity"*³⁹.

Nonetheless, as Carlos Zorrilla, from the Ecuadorian organization Ecological Defence and Conservation of Intag (DECOIN) states: *"The expected rise in demand for copper, cobalt, lithium and nickel will provoke a dangerous race to find and exploit new mine sites. But if in solving one crisis, we create a much more dangerous one, we will be found guilty of unpardonable environmental crimes against nature and, therefore, against future generations"*⁴⁰. Zorrilla has been fighting for over 26 years to protect the Intag – one of the most biodiverse ecosystems on the planet – from copper mining, including the Llurimagua project.



Assembly in Junín (Intag,
6/04/2013).
Photo: Carlos Zorrilla

³⁸ Ministry of Economy. 2019. "Sin minería no habría transición energética" (Without mining there would be no energy transition). <https://www.gob.mx/se/prensa/sin-mineria-no-habria-transicion-energetica-francisco-quiroga-225462?idiom=es-MX>

³⁹ TV Chilean senate. "Especiales TVS - Minería verde para el Siglo XXI". 2021 <https://tv.senado.cl/tvsenado/programas/evento/seminarios/especiales-tvs-mineria-verde-para-el-siglo-xxi/2021-07-30/054017.html>

⁴⁰ Carlos Zorrilla (2021). "If the frogs should win" The Ecologist. <https://theecologist.org/2021/jan/11/if-frogs-should-win>

ELECTRIC CARS AS THE FALSE SOLUTION TO THE CLIMATE CRISIS. AN EXTRACTIVIST MODEL FOR TRANSPORTATION THAT DEEPENS LONGSTANDING INJUSTICES.

One of the pillars of the energy transition is the development of electromobility, which would allow for the decarbonization of the transportation sector. Specifically, measures are in place to incentivize the manufacturing of electric vehicles, by promoting the replacement of conventional, private owner vehicles with electric cars. These measures require increased extraction of metals and minerals such as copper and lithium, among many others.

In this sense, lithium, electric cars, and climate change have become intrinsically linked. Yet as previously stated, lithium extraction for electromobility requires significant quantities of water, at the same time as it takes place in fragile and poorly studied ecosystems, and is linked to the violation of the rights of rural and Indigenous communities in the Global North and South. This model of electromobility, which offsets the emissions and socio-environmental impacts, is presented as a clean alternative so that one part of the world's population can carry on with the same lifestyle without – apparently – emitting CO2.

Ancovinto Resiste, a collective of communities in Aymará fighting against Canadian company Lithium Chile's Coipasa salt flat lithium project (Chile), has criticized the colonial nature of the policies for the energy transition: *"The patterns of colonialism are being reproduced, given that they are destroying our flora and fauna to supply the demand for electric cars in Germany, the United States and Canada."*⁴¹



Protest against Lithium
Chile (2019).
Photo: Ancovinto Resiste

⁴¹ Houmann. (2021).



People of the Red Mountain,
protest against Lithium
Americas' open pit mine
(Nevada, United States).
Photo: Protect Thacker Pass

The Canadian mining company Yamana Gold, for example, promotes its MARA project by stating that “[Copper] is a key raw material in electric vehicles and renewable energy infrastructure that will drive the green transition”⁴². Despite the company’s rhetoric on climate change, its project violates a number of environmental regulations – such as the Glacier and Periglacier Protection Act – and will threaten the water supply for residents in Andalgalá, who are currently facing a water emergency.

The CEO for Lithium Americas, who owns the lithium project in the Caucharí-Olaroz salt flat in Argentina and the Thacker Pass project in Nevada, United States, goes even further. According to the CEO: “You really can’t address climate change without batteries”⁴³. Those statements are questioned by Indigenous communities directly affected by both projects. The *Atsa koodakuh wyh Nuwu* (the People of Red Mountain), who oppose the Thacker Pass project, warn: “We understand that all of us must be committed to fighting climate change. Fighting climate change, however, cannot be used as yet another excuse to destroy native land. We cannot protect the environment by destroying it»⁴⁴

This feeling is amplified by Indigenous leader Steeve Mathias who, together with the Long Point First Nation in Quebec, Canada, opposes the Australian company Sayona Mining’s Tansim lithium project in its territory. According to him, this project will be located in a very sensitive area and asks, “Are we willing to sacrifice that just for the sake of electric cars?”⁴⁵

⁴² Yamana Gold. (2021). “The Importance of Generational Mines in a Mining Company’s Portfolio”. <https://www.yamana.com/investors/news/news-details/2021/The-Importance-of-Generational-Mines-in-a-Mining-Companys-Portfolio/default.aspx>

⁴³ Yahoo Finance. (2021). “Lithium Americas CEO on his outlook for U.S lithium production”. <https://finance.yahoo.com/video/lithium-americas-ceo-outlook-u-204802479.html>

⁴⁴ Sierra Nevada Ally (2021). “People of Red Mountain Statement of Opposition to Lithium Nevada Corp’s Proposed Thacker Pass Open Pit Lithium Mine”. <https://www.sierranevadaally.org/2021/05/20/people-of-red-mountain-statement-of-opposition-to-lithium-nevada-corps-proposed-thacker-pass-open-pit-lithium-mine/>

⁴⁵ What on earth? (2021). “Electric cars are booming. But what are the environmental costs of all those batteries?”. CBC. <https://www.cbc.ca/radio/whatonearth/electric-cars-are-booming-but-what-are-the-environmental-costs-of-all-those-batteries-1.6041893>

We see similar trends at the government level in the documented cases. For instance, the following statements by government officials for Peru and Argentina say: *“lithium, as well as copper, are the metals of the future because they’re part of the demand for... electric cars and batteries”*⁴⁶ (former Vice-minister of Mining in Peru) and *“Argentina: provider of the materials needed for the electromobility boom”*⁴⁷ (Mining secretariat, under the Ministry of Productive Development, Argentina). In Canada, the provincial government of Quebec has declared its intention to become the capital of *“North American Green Batteries”* through the provision of hydroelectric power, critical minerals and some batteries for the North American and European markets.

The same extractivist model that has caused the climate emergency is the one that governments and companies are promoting as the solution to climate change. As phrased by the Red Mexicana de Afectada/os por la Minería (REMA) (Mexican Network of People Affected by Mining) regarding lithium speculation in Sonora, Mexico: *“The current proposal for an ‘energy transition’ is not a paradigm shift. It repeats the same structures of colonialism and capital accumulation that the mining industry replicates around the world.”*⁴⁸

COVID-19: A CHANCE TO PUSH “GREEN” MINING EVEN FURTHER

Extractivism has historically been justified under the discourse of progress and social and economic development. In the context of COVID-19, mining is being positioned as a strategic activity which will allow for the world to overcome the deep economic and social crises brought on by the pandemic, while accelerating the energy transition to fight against the climate crisis.

Mining companies such as Solaris Resources –who plans to build the Warintza open pit copper mine in the Ecuadorian Amazon on the territory of the Shuar Arutam People (PSHA) – has stated, *“Ecuador has a critical role to play in supplying the ongoing global energy transition to electrification in which copper is both indispensable and increasingly scarce,”*⁴⁹ highlighting that the *“mining sector is set to become one of the drivers of the national economy”*⁵⁰. The company promotes this image despite the fact that PSHA reaffirms its right to self-determination and has publicly declared: *“PSHA has already decided: No to mining”*.

⁴⁶ El Comercio. (2018). “Perú suministrará litio y cobre a la industria de autos eléctricos” (Peru will provide lithium and copper to the electric car industry). <https://elcomercio.pe/economia/peru/peru-suministrara-litio-cobre-industria-autos-electricos-noticia-nndc-545728-noticia/>

⁴⁷ Secretaría de Minería Argentina (2020). “South America’s lithium triangle and the future of the green economy”. https://www.argentina.gob.ar/sites/default/files/litio_en_argentina_-_wilson_center_ingles.pdf

⁴⁸ Personal Communication. EJAtlas/MiningWatch Canada (October 2021). “Proyecto minero Sonora Lithium en Sonora, México”. <https://ejatlas.org/conflict/proyecto-sonora-lithium-en-sonora-mexico>

⁴⁹ Miningfeeds (2021). “Solaris Resources (SLS.V): Mining Will Be the Winner in Ecuador’s Presidential Election”. <https://miningfeeds.com/solaris-resources-sls-v-mining-will-be-the-winner-in-ecuadors-presidential-election/>

⁵⁰ Solaris Resources (2021). “Sabías qué?”. <https://www.facebook.com/SolarisResourcesInc/photos/348725296747931>



Shuar Arutam People (PSHA)
(Morona Santiago, Ecuador).
Photo: LluviaComunicación

The Canadian government has already said that in a post-COVID-19 context, “Mining will play a significant role in Canada’s economic recovery, and the Canadian Minerals and Metals Plan (CMMP) has created a strong foundation for growth and recovery”⁵¹. In Latin America, we observe similar attempts to push mining as the driver of post-COVID-19 economic recovery. According to the movement Panama is Worth More Without Mining, a national network that opposes the government’s intentions of turning Panama into a mining country, and who opposes the Canadian company First Quantum’s Cobre Panamá: “Panama’s government has expressed its intention to greenwash mining, indicating that sustainable mining can be developed and that it will contribute to the country’s economic recovery after months of restrictions and impacts on the job market due to the COVID-19 pandemic.”⁵² Nevertheless, as the Panamanian coalition states, “mining is not the way to combat climate change.”

On the other hand, many of the copper mining companies documented in this mapping project (Solaris Resources, Los Andes Copper, Teck Resources) are taking advantage of the health crisis to promote on a global scale the antibacterial properties of copper, presenting the metal as an essential material for the manufacturing of coatings that reduce the transmission of COVID-19. They are promoting this in spite of the fact that the scientific consensus is that COVID-19 “spreads through airborne transmission”⁵³.

For instance, Teck Resources (Quebrada Blanca copper project, Chile) has launched a media campaign in Canada with the messaging “secret weapon in the fight against germs and illness – copper.” The company has posted ads in bus shelters in several Canadian cities with the message “copper kills the virus” (see picture below).

⁵¹ Mining in Canada - The Canadian Minerals and Metals Plan (2020). “Action Plan 2020: Fall update”. Mines Canada. <https://www.mines-canada.ca/en/content/action-plan-2020-fall-update>

⁵² Personal Communication - EJAtlas/MiningWatch Canada (October 2021). “Cobre Panamá from First Quantum Minerals Ltd, Panama”. <https://ejatlas.org/conflict/petaquilla-panama>. See also: Viviana Herrera (2022). “First Quantum Minerals Deal with Panama Sparks Major Environmental and Cultural Concerns”. MiningWatch Canada. <https://miningwatch.ca/blog/2022/2/2/first-quantum-minerals-deal-panama-sparks-major-environmental-and-cultural-concerns>

⁵³ Roni Caryn Rabin and Emily Anthes (2021). “The virus is an airborne threat, the C.D.C. acknowledges”. The New York Times. <https://www.nytimes.com/2021/05/07/health/coronavirus-airborne-threat.html>

Thus, mining is advancing in the continent and around the world, being presented as a necessary and unavoidable – but sustainable – activity. Companies and governments are pushing mining within the framework of a post-COVID-19 economic recovery and as a response to the urgency of the climate crisis. Indigenous peoples and other communities are challenging these discourses and the intimidation tactics that accompany them, denouncing the injustices encompassed by this model. As Putaendo Resiste states, *“the problem is not about one company, in this case Los Andes Copper, but it is about the extractivist model... it’s something much bigger”*⁵⁴.

Bus stop across from the Canadian parliament in Ottawa. The sign says “The most used places need the cleanest surfaces. Copper kills the virus.”



Putaendo, Aconcagua, Chile. Photo: Putaendo Resiste

⁵⁴ Personal Communication. EJAtlas/MiningWatch Canada (July 2021). “Proyecto Minero Las Vizcachitas, Chile”. <https://ejatlas.org/conflict/cobre-en-el-valle-de-putaendo-proyecto-vizcachitas/?translate=en>

CONCLUSION

This report partially documents a series of conflicts developing and intensifying in the Americas in the face of the current energy transition.

There are other struggles against mining in the Americas, and many more in Asia, Africa, Europe, and Australia, as well as against projects in the Arctic and seabeds. The collaborative mapping process presented in this report aims to make some of these struggles more visible, to help support the building of alliances between groups and networks in the region and around the world, while also shedding light on the false expectations and contradictions at the heart of the current narrative around the energy transition.

One of the report's conclusions points to the need to rethink energy transition models, to advance towards a more socially and environmentally-responsible, just and sustainable future that does not deepen the global environmental and climate crisis. Mining corporations – mainly Canadian and Australian in the case studies – and national governments are promoting a model that does not question the lifestyle of the Global North, nor does it ask key questions such as energy for what, for whom and at what socio-environmental cost.

The extraction of so-called *necessary* metals and minerals for the energy transition means the destruction of territories, ecosystems, bodies of water and ways of life. These impacts are affecting key ecosystems that play a central role in regulating the global climate. This destruction is rendered invisible in the promotion of renewable energy infrastructures or electromobility in the world. Electric cars are widely marketed as the way to mitigate the effects of carbon emissions in climate change, creating the impression that electric vehicles are intrinsically clean and that they are the solution to the climate crisis. On the contrary, as we showed [on the map](#), communities from South to North of the Americas don't see a polished, green, shining car in these commercials. They see, experience, and associate "green" mining with destruction. The broad response of many mining-affected communities is that **they do not want their territories sacrificed in the process**, and even less so if it is to maintain the irresponsible consumption levels and economic growth plans of the Global North.

Governments and companies, as well as investors, use the argument of the climate/health/economic emergency to promote mining as the right and necessary solution to “technologically” resolve problems – problems that have deep political and social roots. The discourse around “green” mining transforms one of the causes of the present crisis –resource extraction– into one of the pillars of its solution. The current model for the energy transition is presented as an unprecedented opportunity for mining companies to diversify and multiply their earnings. Likewise, many energy companies are expanding renewable energy projects without, in many cases, stopping their profit-making activities based on fossil fuels. These government and corporate-led proposals for the energy transition represent more of a shift in the market, which is creating new processes for speculation, diversifying niches and redirecting capital towards a new process of **“accumulation by decarbonization.”** We’d like to highlight that other energy “solutions,” such as nuclear energy, won’t magically solve the energy transition. There could be new maps illustrating the effects of and pressures linked to uranium mining, with more thought given to the unsolved challenge of radioactive waste management.

To summarize, the present model of the energy transition is being driven by governments and corporations. It is expanding and intensifying the frontier of resource extraction, reaching into and negatively impacting remote, biodiverse and fragile territories – territories inhabited by Indigenous, rural communities, who are opposed to mining and are organizing to resist its impacts. Key actors such as local communities, experts, academics, and activists are missing from this global energy transition discussion. And they are the ones who can question the prevailing development model and bring other perspectives to rethink models of consumption. The scale of the projected demand of metals and minerals is such that measures such as the improvement of efficiency or recycling are necessary, but by themselves, won’t be sufficient to provide these materials. The energy requirements for the new electric technologies are significant. Even if there is a net energy yield from windmills or solar panels (combined with sufficient battery storage), this is not very high if one considers the energy spent on infrastructure and equipment over their lifecycle. Therefore, it is crucial to significantly reduce the consumption of materials and energy, especially in the Global North⁵⁵.

**To summarize, movements in the Americas and around the world say
“There can be no climate justice if it is extractivist.”**

⁵⁵ MiningWatch Canada (2019.) “International Conference: Turning Down The Heat: Can We Mine Our Way Out of the Climate Crisis?” https://miningwatch.ca/sites/default/files/miningwatch_review_page.pdf

