

Jadar Lithium Mine, Serbia

A Raw Deal ICT metal mining case study

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SN040288, Depositphotos

Acknowledgements

Association Protect Jadar and Rađevina

Center for Ecology and Sustainable Development (Centar za ekologiju i održivi razvoj – CEKOR) is an environmental and development organisation. Apart from monitoring international financial institutions' activities in Serbia, CEKOR is working on issues in the areas of transport, waste, biodiversity, genetically modified organisms (GMO) and making the city of Subotica sustainable. CEKOR is a member of CEE Bankwatch Network.

Coalition for Sustainable Mining, Serbia (Koalicija za održivo rudarstvo u Srbiji – KORS) is an organisation that promotes the application of the strictest social and environmental standards for mining and mineral use in Serbia.

CEE Bankwatch Network is the largest network of grassroots, environmental and human rights groups in central and eastern Europe. It monitors public finance institutions that are responsible for hundreds of billions of investments across the globe. Together with local communities and other NGOs Bankwatch works to expose their influence and provide a counterbalance to their unchecked power.

About ICT and the mining-related work of CEE Bankwatch Network

CEE Bankwatch Network has been monitoring mining projects in Europe and abroad for years. Bankwatch cooperates with the Make ICT Fair consortium, which seeks to reform the information and communication technology (ICT) manufacture and minerals supply chains and to improve the lives of workers and those impacted along different stages of the ICT supply chain. Our long-term cooperation with groups monitoring the impact of mining on people and environment as well as with communities directly affected by mines or smelters strengthens our conviction that the many negative impacts of mining must finally come under the proper scrutiny.



This report has been produced with the financial assistance of the European Union. The contents of this report are the sole responsibility of CEE Bankwatch Network. It can under no circumstances be regarded as reflecting the position of the European Union.



Introduction

Residents of the Jadar River Valley in western Serbia are against the development of a lithium mine and processing plants proposed by the international mining corporation Rio Tinto. Citizens argue that, if developed and deployed, these facilities will threaten more than 15,000 agricultural households in the town of Loznica and the Krupanj municipality and the health and well-being of citizens of the communities of Loznica, Šabac and Valjevo.

For over 15 years, Rio Tinto has been exploring the extraction and production of the mineral jadarite, named for the Jadar River Valley where it was discovered¹, in Serbia. Jadarite contains lithium and boron, both relatively rare and industrially important elements. Lithium is used for lithium batteries; boron is used in alloys, ceramic, glasses, and other applications. According to some promotional press coverage², it is estimated that there are 200 million tons of lithium borate ore in the Jadar Valley, which would make Jadar's future mines one of the world's largest lithium deposits, supplying 10% of the world's demand for lithium.

However, despite its economic potential in the mining industry, the project threatens the existing economy, which is based on high-quality agriculture. The Jadar River and its alluvial plain, together with its upstream tributary rivers and streams near the border with Bosnia and Herzegovina, is one of the relatively well-preserved parts of Serbia, where a predominant portion of citizens is engaged in agricultural production. According to the latest census, about 20,000 citizens in this region actively rely on agriculture³. This region has extremely good soil, a direct product of floods and their intensive deposits, and its good climate, geographic orientation and moderate altitude make it rich in the production of honey, grapes, fruit, vegetables, cattle and other agricultural products. The new mine threatens to change all of that, and has resulted in massive citizen opposition.

The Serbian government promotes this investment as the 'project of the century', a 'project that will put Serbia on the map of high technologies', and one that should serve as a flagship success of both Rio Tinto and the Serbian government. However, there are numerous problems with the project, chiefly that Rio Tinto has not disclosed crucial information about how lithium will be extracted and what the impacts will be on the population; the government of Serbia did not inform the governments of Bosnia and Herzegovina and Croatia through transboundary consultations about the planned project; the Serbian government has offered illegal support to facilitate the mining company's initial work; and the project will drastically and irreparably alter the environment and way of life of the residents living there.

¹ Rio Tinto, ["Want to know if we've found kryptonite?"](#), 15 September 2004.

² ["Rio Tinto" otvorila info centar: Sve informacije o najčuvnijem projektu "Jadar"](#), Blic, 22 November 2016.

³ [Loznica – grad](#), AGROmedia, 3 September 2020.

Photo: KORS

Jadar River Valley, Serbia



Missing project parameters

Through a series of meetings with civil society and community members in 2020, Rio Sava, the daughter company of Rio Tinto in Serbia, has disclosed different versions of the project parameters that are under consideration. However, the current spatial plan and its strategic environmental assessment contain no detail about the technologies that would be used to produce lithium; any description whatsoever about the quantities of product, waste and water consumed from the rivers Jadar and Drina; details about the impact on surrounding cities and municipalities; or what will happen when Jadar floods the areas where Rio Tinto plans to put chemical facilities, flotations, deposits of dangerous materials or explosive chemicals.

Despite a gargantuan effort and more than USD 200 million spent, Rio Tinto has not disclosed a final design for the process, claiming that it is its intellectual property. It apparently does not matter that this 'intellectual property' will directly endanger hundreds of square metres of well-preserved environment and villages.

The project's Spatial Plan of Special Aim⁴, presented in December 2019, requires assessments on economic feasibility and environmental and social impacts. These have not been produced nor disclosed for public scrutiny. The plan states that the project will cover 293.9 square kilometres on the territory of Loznica and Krupanj, where there are four partially or completely protected areas, the most important of which is Tršić-Tronoša. The jadarite deposit itself is located in the river valley on agricultural land, and the mineral is at a depth of 100 to 720 metres.

According to the spatial plan, the zone of mining activities will cover 854.8 hectares; the zone of production and industrial activities will cover an area of 646.5 hectares; and other land, which will be used for the disposal of industrial waste, construction of access roads and supporting infrastructure, will cover a zone of 358.5 hectares. It will be necessary to purchase some land and real estate and relocate households. Despite this, the plan has not provided concrete information on how the project will impact the surrounding area and the people who live there.

The company's presentations also failed to disclose any exact numbers about the quantities of water, sulphuric acid and other acids, heavy metals and other poisonous substances that will be utilised, citing commercial confidentiality. According to currently developed technologies, lithium extraction is a set of chemical processes in which lithium, a highly reactive alkali metal, is isolated from a sample. Once the mineral material is removed from the ground, it must be heated and crushed. The crushed mineral powder is combined with chemical reactants, such as sulphuric acid, and then the suspension is heated, filtered and concentrated through an evaporation process to give marketable lithium carbonate. The resulting wastewater is treated for reuse or disposal. Rio Sava lists about 16 chemical reactions required in lithium mining, and about 500,000 litres of water⁵ are typically needed to extract one ton of lithium.

Such a need for water from the local environment would affect farmers, who would be deprived of valuable resources for cattle breeding and crop irrigation. In addition, the toxic cocktail of chemicals used to extract lithium from the ground is also capable of infiltrating nearby rivers, streams and water supplies. This is exactly the kind of catastrophe that happened in 2016 on the Liqi River in Tibet, where mining operations contaminated the water and resulted in thousands of dead fish and many poisoned cattle.

However, Rio Tinto still has not disclosed what technology they will use to extract lithium from jadarite. Since the ore in this region has a unique composition, the extraction technology is still unknown and is being tested at the Technological Development Centre Bundoora in Melbourne, Australia.

⁴ The Spatial Plan of Special Aim is a plan that is being decided on by the government of Serbia according to the Law on mining, without the consent of local communities or a decision from the Serbian Parliament. All other spatial plans for mining projects are decided upon by local or national parliaments according to the size or intrusiveness of the proposed industrial activity, mining or other type of activity. This solution was introduced into the legal system of Serbia in recent years, despite the outcry from opposition parties and NGOs who have claimed that it violates the Serbian Constitution.

⁵ Miroslav Mijatović, 'Litijum – Belo zlato ili ekološka zabluda?', Podrinjski Anti Korupcijski Tim, 2016.

Unclear costs to research and prepare the lithium mine

One of most problematic issues regarding the Jadar project is the confusing figures available for what exactly Rio Tinto has already invested in exploration and research. According to some reports from 2016,⁶ Rio Tinto had invested USD 60 million, but in 2015 it reported that it had already invested EUR 70 million⁷ in research. In 2019, they reported a total investment for the same purpose of USD 200 million⁸ while in July 2020 they stated that they had invested USD 250 million⁹.

In July 2020, Rio Tinto approved an additional investment of almost USD 200 million¹⁰ for the further development of the Jadar project. Currently in the Project Feasibility Study phase, the team is focused on the completion of technical documentation, the completion of the Study on Resources and Reserves in accordance with Serbian regulations, and obtaining the necessary permits and land purchases.

Questionable state involvement

On 25 July 2017, a memorandum was signed between Rio Tinto and the government of Serbia, represented by Prime Minister Ana Brnabić,¹¹ which confirmed the production of lithium would start in the year 2023. Even though there is high-level institutional support for a completely private mining enterprise, the government of Serbia has nevertheless decided to utilise government and other state capacities to facilitate the obtaining of permits, claiming the project is 'in the public's interest'. This constitutes illegal administrative support. This classification of the project has also resulted in indirect financial support for Rio Tinto in obtaining the necessary soils and properties for development of the project. The government also plans to provide infrastructural support for the project in the form of investment in removal of regional roads,¹² the construction of new roads, the provision of a high voltage network, gas connection, and most destructive of all, the provision of water from the Drina River in large daily volumes.

The Serbian non-governmental organisation (NGO) Coalition for Sustainable Mining (KORS) has already made a constitutional complaint stating that obtaining soils and properties for mining is an exclusive private activity that has gained the status of public interest, which is clearly in conflict with the Serbian Constitution and European standards on state aid.

The government established a governmental body to oversee the project on 26 November 2020. This group consists of high-ranking ministers, state secretaries, representative of Loznica and public companies that are all members or close allies of the ruling party and thus are unlikely to challenge the authoritarian and non-democratic decisions being taken, and there is not likely to be any real or democratic discussion of alternatives.

⁶ ["Rio Tinto" u istraživanje jadarita uložio 60 mil USD - Rude dovoljno za 20% svetskih potreba za litijumom](#), eKapija, 19 May 2016.

⁷ ["Srbija: Privatne investicije u rudarskoj eksploataciji"](#), Serbia Energy, 21 April, 2015.

⁸ ["Rio Tinto će litij proizvoditi pokraj rudnika u Loznici"](#), Poslovni dnevnik, 6 November 2019.

⁹ ["Brnabić: Rio Tinto najavio ulaganje još 200 miliona dolara u projekat "Jadar"](#), N1, 30 July 2020.

¹⁰ ["Rio Tinto ulaže dodatnih 200 miliona dolara u projekat "Jadar"](#), B92, 30 July 2020.

¹¹ ["Potpisan Memorandum o razumevanju između Rio Tinto i Vlade Srbije"](#), Amcham Serbia, 24 July 2017.

¹² On 19 October, the voting machine of ruling party that, following the controversial April 2020 elections, controls the national parliament and all of the local governments in Serbia, [decided](#) that regional road Loznica-Valjevo will be moved, which will significantly damage a number of agricultural properties and will cost at least EUR 10-20 million.

Residents not informed

¹³ After outrage broke out, citizen representatives together with representatives of CEKOR and KORS requested a meeting with Rio Tinto experts, and two meetings have been held where confusing and contradicting facts and plans about the project were presented. Perhaps the most important findings of these meetings were that Rio Tinto still does not have a final decision about technology that should be utilised to extract lithium and that the project parameters and its resource consumption are not definite. Therefore, the filing of the request for the development of a Spatial Plan for Special Aims is actually illegal and misleading. The approval of the strategic environmental assessment issued by Ministry for the Environment plus the Plan itself should be considered void, all the consequent legal solutions annulled and damages to citizens covered.

The residents that will be affected by the project, specifically the village of Loznica and the municipality of Krupanj, were not properly informed about the project by the government or Rio Tinto. They learned from secondary sources that a large project was being prepared that would endanger their livelihoods and their environment. They discovered that public consultation for this strategic plan had been announced and planning sessions conducted, but that none of the citizens had been informed or invited. They later learned that additional villages in Krupanj would be affected by Rio Tinto's plans to develop a flotation and deposit of mining waste in their pristine surroundings. Residents of the villages Dvorska, Krasava, Upper Brezovice and Cerova will only receive the by-products and waste from the project without any of the economic benefits.¹³

As of late November 2020, none of the representatives of interested NGOs or local inhabitants were invited to participate in a detailed feasibility assessment process. Moreover, Rio Tinto and the government of Serbia did not conduct any socioeconomic studies about development scenarios without the mine, nor studies about how much potential agricultural production will be lost and the cost of toxins entering the water, food, air and soil of this region.

Once they learned about Rio Tinto's plans, residents took swift action to try to stop the project. They still experience the negative impacts of nearby lead mines and processing plants, most of which have been closed for more than a decade, that are still polluting some of the rivers. They believe it is impossible for such intrusive and destructive industrial activity to coexist with the diverse, high-quality agricultural production they rely on for their incomes. They have conducted several meetings with Rio Tinto and government representatives, and have started to protest.

Photo: KORS

Jadar River Valley, Serbia



Citizens fight back

Despite the systemic and organised threats of Rio Tinto and the government, the opposition of citizens in Loznica and throughout Serbia is growing. At the beginning of October 2020, approximately one hundred citizens protested in front of Rio Tinto's information centre in Loznica, demanding that a referendum be held before the opening of the mine. Several organisations have issued proclamations demanding the suspension of all research, administrative and legal activities related to the construction of the mine; the abandonment of the lithium exploitation project; and the withdrawal of decisions on the special purpose spatial plan for Jadar.¹⁴

It is clear that there will be cross-border effects of this project if it goes forward, due to its location near the border with Bosnia and Herzegovina (BiH) and the fact that the Jadar River flows into the Drina River, which continues into BiH. KORS and the NGOs Protect Jadar and Rađevina informed NGO activists from BiH about this, and in autumn 2020, these activists called on the BiH government to demand a trans-boundary EIA, since the mine's waste, carried from Serbia by the Drina, would then pollute arable lands in BiH.

The government of Serbia has ignored the massive citizen opposition and has continued working with Rio Tinto and holding diplomatic meetings with representatives of the United Kingdom, Australia, the United States of America, the World Bank and the EU representation in Serbia, all of whom support the project.

If all goes according to plan, construction of the mine should begin in 2022. Rio Tinto has started activities on the purchase of real estate (houses and land) at the locations on which it plans to open the entrance to the underground mine and processing plant (about 40 households), so that it can begin construction work immediately after the final decision on the development of the project. The intention is not to use expropriation, but to obtain the necessary land by agreement. However, so far in these purchases, Rio Tinto has told owners that if they do not sell the land at the offered price, they will be expropriated. This reinforces the conclusion that Rio Tinto has a preferential status with the government of Serbia, and that it is directly manipulating and using the administrative power of the state for its private benefit.

¹⁴ In May 2020, KORS and Protect Jadar and Rađevina published a clear proclamation about the unacceptability of the project due to the enormous treats of destruction it poses to this region. Momčilo Alimpić and Zvezdan Kalmar, *Proglas*, Magazin Tabloid, accessed 12 February 2021.



Photo: KORS

Jadar River Valley, Serbia

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