

# Lithium Exploitation in Serbia: What Can We Learn from Superman?

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## **Is lithium indispensable for green transition or could it simply stay in the ground?**

Lithium is considered to be a chemical element of the future, crucial for the success of the green transition because of its use in batteries.

Demand for lithium is already on the rise; by 2030 it is predicted to increase fivefold. Rising lithium prices and rising demand have boosted interest in lithium ore, called jadarite, discovered in Serbia. However, local communities disagree with the foreign companies' plans to mine lithium in Serbia.

Jadarite – a lithium-sodium borosilicate – shares a striking resemblance to the mythical kryptonite, a mineral made famous by comics and movies about Superman. The green mineral, created through the destruction of planet Krypton, robs Superman of his powers. Short exposure to it is harmless for ordinary people, but becomes deadly in the long run.

When this equivalent of kryptonite was first discovered on planet Earth in late 2004, near the Serbian town Loznica, it was yet unknown how important it would soon become for humanity. After the mineral's discovery, the story began to unfold, so that we slowly learned who stands to lose power from it, what kind of villains can use it, as well as whom the mineral can harm in the long run.

Still, given that we don't live in a comic book where good always prevails, we will try to predict what the fight for this valuable resource might have in store.

## **The struggle surrounding the exploitation of jadarite**

The plot begins when a large company chooses to interfere in the lives of local population in Loznica area. Attracted by the newly discovered treasure in the form of abundant jadarite ore, rich in lithium and boron, the Anglo-American Rio Tinto company, the second biggest mining company in the world, launches plans for exploitation of the strategically important ore.

Kryptonite is crystal-green, and jadarite is an important mineral for the green low-carbon transition.

In the green transition, lithium will become as important as oil is now, since it is essential for the production of batteries, which represent the basis for a complete transition to renewable energy sources. Batteries are necessary because they have proven to be the best means of storing energy so far, and people will still need energy on days when there is no sun and the wind doesn't blow. In addition, the transition to more sustainable transport and hybrid cars demands the production of lithium batteries to pick up pace.

Serbia has been both blessed and cursed with close to ten per cent of the so far explored lithium reserves in the world. The ore lies along the right bank of the river Drina, following the waterway of the river Jadar, after which the mineral was named. The lucky part is that, if used properly, this

resource could contribute to a rapid development of the area and the whole country. The misfortune, on the other hand, stems from fact that such development and the possible rise in living standards – if any should follow – will be paid for by permanent destruction of the environment.

The Rio Tinto company, which claimed legal right to jadarite ore exploitation during 2020, has completed a geological research of the jadarite deposits. Rio Tinto entered the phase of preparing a Feasibility study, which should be completed in 2021. After that, the construction of an underground mine is planned to follow, from which the final products in the form of boric acid, lithium carbonate and sodium sulphate would be obtained after processing.

The Rio Tinto company bases its PR on alleged concern for the environment and local communities. Their announcements claim that the best and least harmful methods will be used, and that the local population doesn't have to worry about pollution.

Local activists who oppose the project don't believe everything to be as fabulous as the company Rio Tinto presents it, claiming that the extraction of jadarite could exhaust the agricultural potential of the fertile land along Drina river. So far, several protests have been held to draw attention to the non-transparency of the entire process. Activists warn that, despite Rio Tinto's boasting of involving the local community, the locals are left clueless.

Both local activists' and environmental organizations' major concern is the potential extent of pollution. Rivers in this part of Serbia often overflow. With the tailings planned to be located near Jadar river, any flood would represent a potential ecological catastrophe. In addition, aware of Rio Tinto's dirty track record, the local population doubts that the best available technologies will be used and worries that they will be left without the fertile soil they lived off traditionally.

Existing concerns about environmental degradation are complemented by the emergence of mistrust in the economic benefits of the project. Serbia currently has one of the lowest ore rents in Europe. According to a calculation made by a civil movement called Podrinje anti-corruption team, Rio Tinto would take about four billion euros from the country during the first ten years of exploitation, while Serbia's profit could be some three hundred million euros.

Prime Minister Ana Brnabić stated that lithium will not be exported as raw material, and that Serbia will produce semi-finished or final lithium products. However, apart from the Prime Minister's statement, there is no evidence of any plans to build plants in which raw lithium and boron ore would be converted into finished products, thus obtaining added value.

As neither the local population nor the Rio Tinto company are willing to give up on their demands, it seems that an epic fight over the fate of the valuable mineral is to be expected further down the road.

### **Is a different exploitation possible?**

If lithium is one of the key elements for the green transition, it should be examined whether there are other versions of its possible exploitation.

Of course, no one would want a mine to open next to their house or in the area where they live. Still, if we are guided by a development paradigm that envisions a green transition to low-carbon development, lithium must be mined somewhere. If the ore isn't mined in Serbia, it will be mined in Bolivia, Argentina, or Chile, where local communities will also be affected.

It is predicted that the needs for lithium will grow very quickly, and that by 2030 it will increase fivefold in comparison to 2020. The growing demand for lithium will be accompanied by additional

pressure to open new mines and increase production in the existing ones. How, then, to deal with such challenges?

If it is already known that lithium is a strategic resource of the future; the Serbian state should take on the role of a superhero and shouldn't give up on this resource to a private company that will have a monopoly over its production. Serbia could look upon Bolivia, which has placed the production of lithium under its authority, and thus secured control and profit from the mineral's mining.

The state should establish a public company under direct citizen control, which would take care of the resource. If mining was to take place, the state should be responsible to its citizens to provide the best available technologies and pollution repair, which in such nature-extensive processes cannot be avoided no matter what technologies are used. This would keep the profit from ore production in public ownership, and not leave just a small ore rent to the public.

Besides mines, the state should also ensure that lithium processing plants (in which finished products in the form of lithium batteries would be obtained) be opened. And why not take things further and envision a factory of hybrid cars to be opened in Serbia in the foreseeable future. This would ensure long-term development not only in the Loznica area, but also much wider.

Unfortunately, the precondition for this type of development is that there is a state ready to work in the interest of its citizens, and not to finance someone else's energy transition and its own environmental degradation.

In addition, such development requires a change in the developmental paradigm and the abandonment of foreign direct investment as the "engine" of development. The state would have to assume a much more influential role. We don't see these things happening currently, but it is still important to emphasize that different models do exist and require political will in order to be implemented.

Yet, just as kryptonite is harmless to ordinary people in the short term and deadly in the long run, this type of development would bring ecological degradation in the long run, but could potentially increase equality in the society.

### **An alternative vision of development - to keep lithium in the ground**

In the Superman comics, the use of kryptonite always harms someone. The situation is similar with lithium, the exploitation of which is possible not only in the vicinity of Loznica but also in the vicinity of Valjevo. Perhaps the best solution for it would be to keep it intact. This would prevent the problems to which its exploitation leads.

Such an endeavor requires a paradigm shift at all levels, from local, national to global. In order for lithium to remain in the ground, it is first of all necessary to stop the constant race for growth of material and energy consumption, even if it is supposedly green. The greenest products and energy are those that do not have to be produced.

For something like this to happen, a socio-ecological transformation is needed towards a society that will spend less, but more fairly and more efficiently. We need to ask ourselves whether the constant increase in production and consumption brings us happiness, or whether it is hidden in other things.

The pandemic has shown us that we can live using fewer resources and less energy, and that we need to invest in some other things that are less materially intensive, but contribute substantially to the quality of life for more people – such as public health, education, and care.

The saga of Superman begins when his home planet Krypton explodes, and his parents send him to Earth. To avoid our only planet being destroyed and turned into radioactive waste like Krypton was, it seems that all people must take on the role of Superman and jointly devise new development strategies, which are not exclusively related to the constant use of more and more resources and energy.

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## **P.S.**

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