

Lithium Unveiled: Market Trends and Serbia's Mining Situation and Potential

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Early Exploration of Lithium in Serbia



- **Mid-1990s:** Faculty of Mining and Geology team analyzes areas in former Yugoslavia for borate and lithium deposits.
- **1997:** Research gains attention from Rio Tinto, leading to initial contact.
- **Exploration Tour:** Rio Tinto geologists tour potential sites in western Serbia, identified by the faculty.
- **Market Opening (2001):** Rio Tinto establishes a Serbian subsidiary.
- **2004:** Discovery of significant lithium deposits ("white gold") in western Serbia.

Discovery of Jadarite in Serbia

- In 2004 Rio Tinto identifies **Jadarite**, a mineral rich in lithium and boron.
- The Jadar deposit is **near the Jadar River, close to Loznica in Western Serbia**.
- **Unique Composition:** Contains two primary minerals – jadarite ($\text{LiNaSiB}_3\text{O}_7(\text{OH})$) and searlesite ($\text{Na}(\text{H}_2\text{BSi}_2\text{O}_7)$).
- **High Silicon Dioxide Content** – Higher than other boron minerals.
- Unique mineralization, not found in other known deposits.



Lithium Reserves and Jadar Project Potential

- Serbia ranks **12th globally** with 1.14% of lithium reserves, totaling 1.2 million tons.
- Significant reserves within Europe, adding to its strategic importance.
- Jadar mine could be **operational by 2028**.
- **Production Goals:** Aims to produce borates, lithium carbonate, and sodium sulfate.
- **Economic Impact:**
 - **Budget:** USD 2.55 billion allocated.
 - **Employment:** 1,300 skilled jobs, with 90% of workforce expected to be Serbian.

COUNTRY	% OF LITHIUM RESERVES	LITHIUM RESERVES TOTAL 2023 (MILLION TONS)	LITHIUM RESERVES TOTAL 2022 (MILLION TONS)	LITHIUM RESERVES TOTAL 2021	LITHIUM RESERVES TOTAL 2020 (MILLION TONS)
Bolivia	21.89%	23	21	21	21
Argentina	20.94%	22	20	19	19.3
United States	13.32%	14	12	9.1	7.9
Chile	10.47%	11	11	9.8	9.6
Australia	8.28%	8.7	7.9	7.3	6.4
China	6.47%	6.8	6.8	5.1	5.1

Community Impact and Legal Developments



- **Donations** were made to local communities, hospitals, schools, and cultural centers
- **Land Acquisition** - Over 40% of the 250-acre site purchased by Rio Tinto.
- **Spatial Plan Adjustments:**
 - Reclassification of agricultural to construction land.
 - Adjustments to railway lines and gas pipeline plans.
- **Project Components:**
 - Includes underground mine, processing plant, and industrial waste landfill.
- **Legal Developments:**
 - 2022: Project licenses revoked.
 - 2024: Serbian Constitutional Court overturns previous halt, allowing project to proceed.

Environmental Commitment and Challenges of the Jadar Project

- **Environmental Focus Areas:**
 - Water contamination
 - Air pollution
 - Waste management
- **Planned Environmental Impact Assessments (EIAs):**
 - Underground mine
 - Ore processing plant
 - Industrial waste landfill
- **Community Engagement** with regards to efforts aimed at balancing economic growth with environmental preservation.
- **Current Status:** Pending completion of EIAs, essential for approvals on biodiversity, water resources, and land use.



Public Opposition to the Jadar Mine Project

- Public opposition has been significant, with **large-scale protests** against the Jadar mine project.
- Recent protests organized outside the Constitutional Court opposing Rio Tinto's plans.
- **Political Criticism** – Serbian MP criticizes government for prioritizing foreign interests over Serbia's natural resources.



Environmental Concerns and Impacts


- **Exploratory Drilling Impacts:**
 - Contaminated water with high boron levels damaging local crops.
 - Rivers downstream show increased boron, arsenic, and lithium concentrations.
 - Soil samples exceed safe remediation levels.
- **Potential Future Risks:**
 - Risks from tailings ponds, wastewater, and pollution (noise, air, and light) if the mine proceeds.



Economic Benefits of the Jadar Project

- **Investment Impact:**
 - USD 2.55 billion investment (approx. 4% of Serbia's GDP).
 - Projected annual GDP contribution: 695 million (about 1% of total GDP).
- **Economic Contributions:**
 - Significant tax revenue generation.
 - Job creation for skilled workers.
 - Promotion of a local supply chain, benefiting domestic companies.





Concluding remarks

- **Challenges:**

- Environmental concerns (water contamination, soil impact).
- Public opposition and protests.

- **Opportunities:**

- Economic boost for Serbia (investment, GDP growth, job creation).
- Strategic role in global battery supply chain.
- Potential to support the clean energy sector.

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**Thank you for
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