

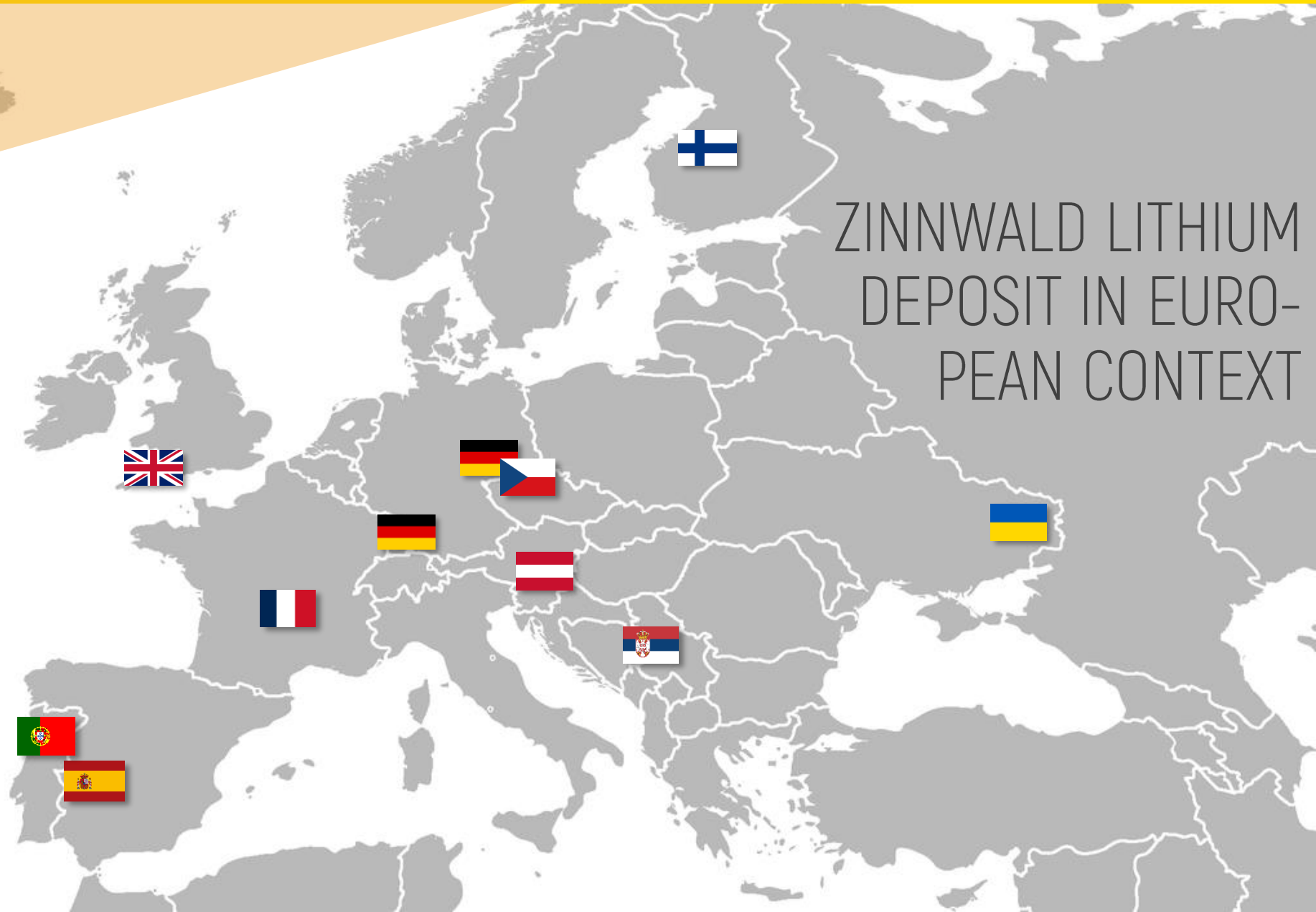
LITHIUM MINING IN EASTERN ORE-MOUNTAINS

Impacts on nature

Lithium Triangle
Conference

NOVEMBER 21,
2024

ZINNWALD LITHIUM DEPOSIT IN EURO- PEAN CONTEXT

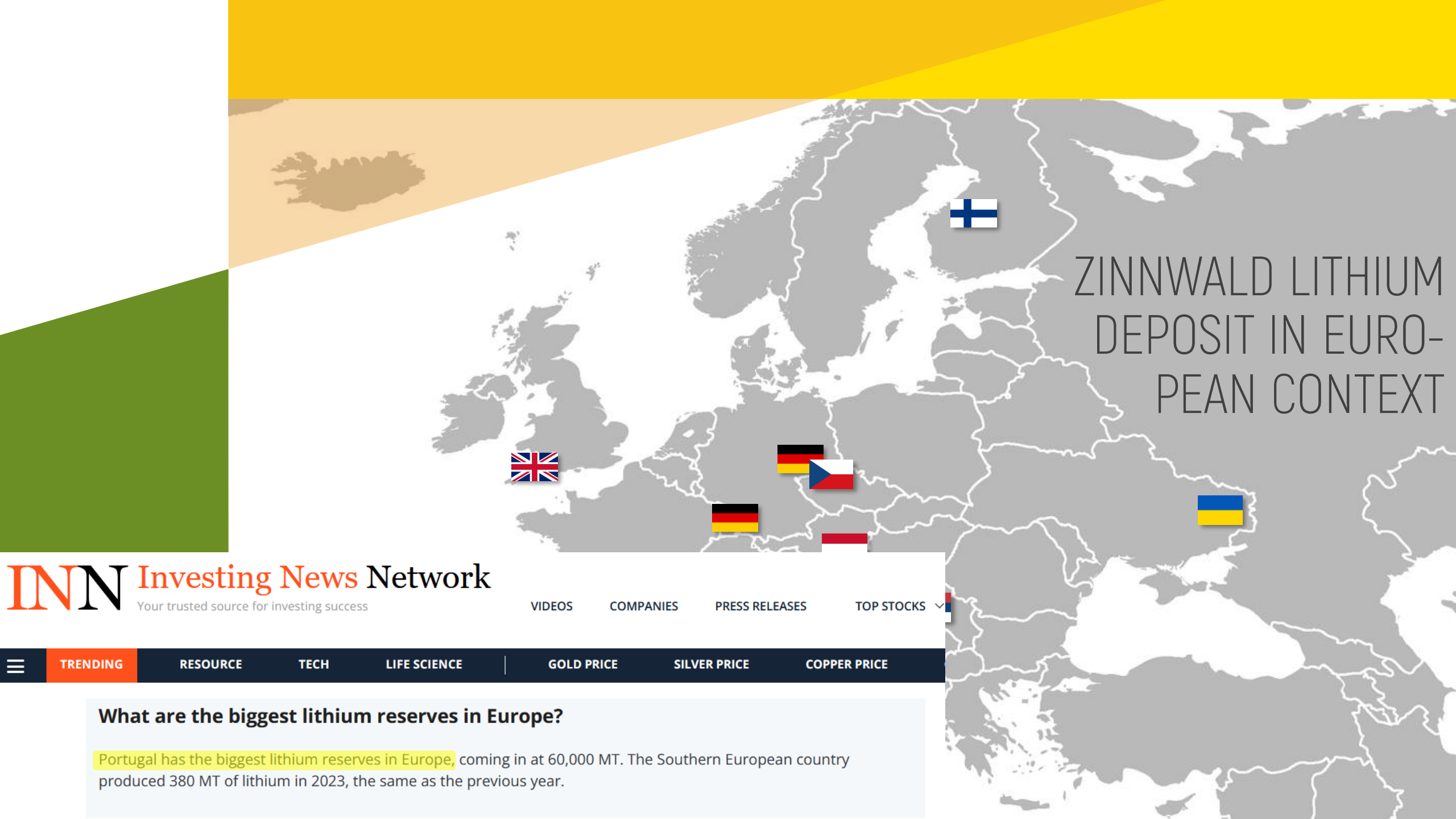


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04 | LEGACY

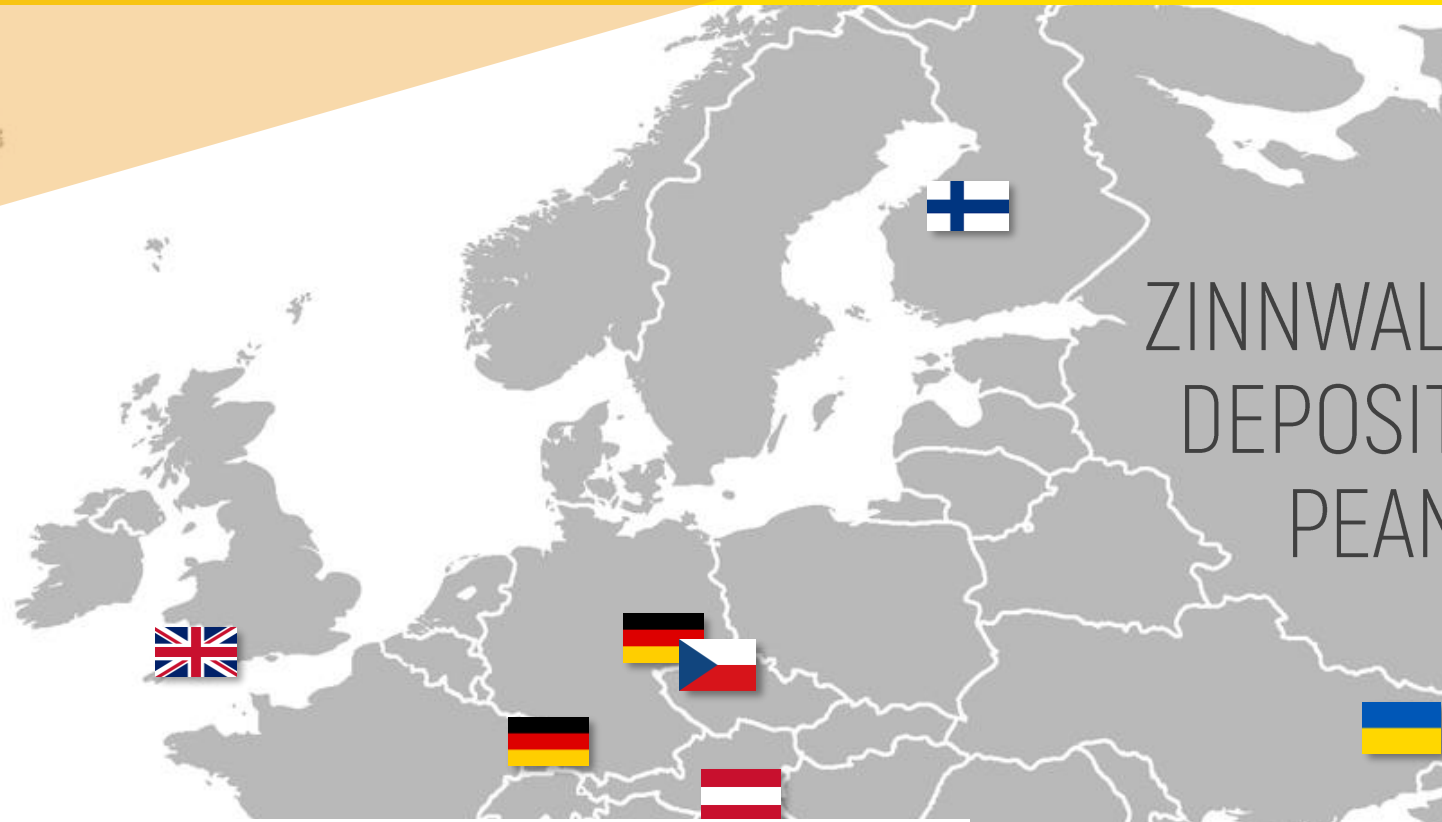


ZINNWALD LITHIUM DEPOSIT IN EUROPEAN CONTEXT

What are the biggest lithium reserves in Europe?

Portugal has the biggest lithium reserves in Europe, coming in at 60,000 MT. The Southern European country produced 380 MT of lithium in 2023, the same as the previous year.

ZINNWALD LITHIUM DEPOSIT IN EUROPEAN CONTEXT



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Recent	SPY	QQQ	SPIKE	BTC/USD	DIA	GLD						
Markets	599.79	▲ 0.27%	513.94	▼ 0.04%	15.56	▲ 2.03%	84782.46	▲ 5.4139%	444.07	▲ 0.9%	241.51	▼ 2.6%

Mouthwatering Opportunity

News have just broken that **the largest lithium mine in Europe will be in Spain.** Lithium Iberia has submitted to the Junta de Extremadura an exploitation project for the lithium deposit located in the Cañaveral municipality of Cáceres.

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ZINNWALD LITHIUM
DEPOSIT IN EUROPE



POLITICS | SERBIA

Lithium mine project in Serbia triggers mass protests

Nita Blake-Persen

08/11/2024

Tens of thousands of people turned out in Serbia's capital, Belgrade, to protest renewed plans for what would be **Europe's largest lithium mine**. Environmental groups fear it will cause major environmental destruction.

Frankreich plant Europas größte Lithium-Mine

Von Niklas Záboji, Vaulx-Milieu 12.07.2023, 09:45 Lesezeit: 5 Min.



ZINNWALD LITHIUM
DEPOSIT IN EURO-
PEAN CONTEXT

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ZINNWALD LITHIUM IN EURO- CONTEXT



MINING.COM

Wolfsberg lithium project (Image: European Lithium)

European Lithium said Luxembourg's alternative asset manager GEM will fund its unit for the development of **Europe's largest lithium mine, Wolfsberg** in Austria, which has a supply deal with German automaker BMW AG.

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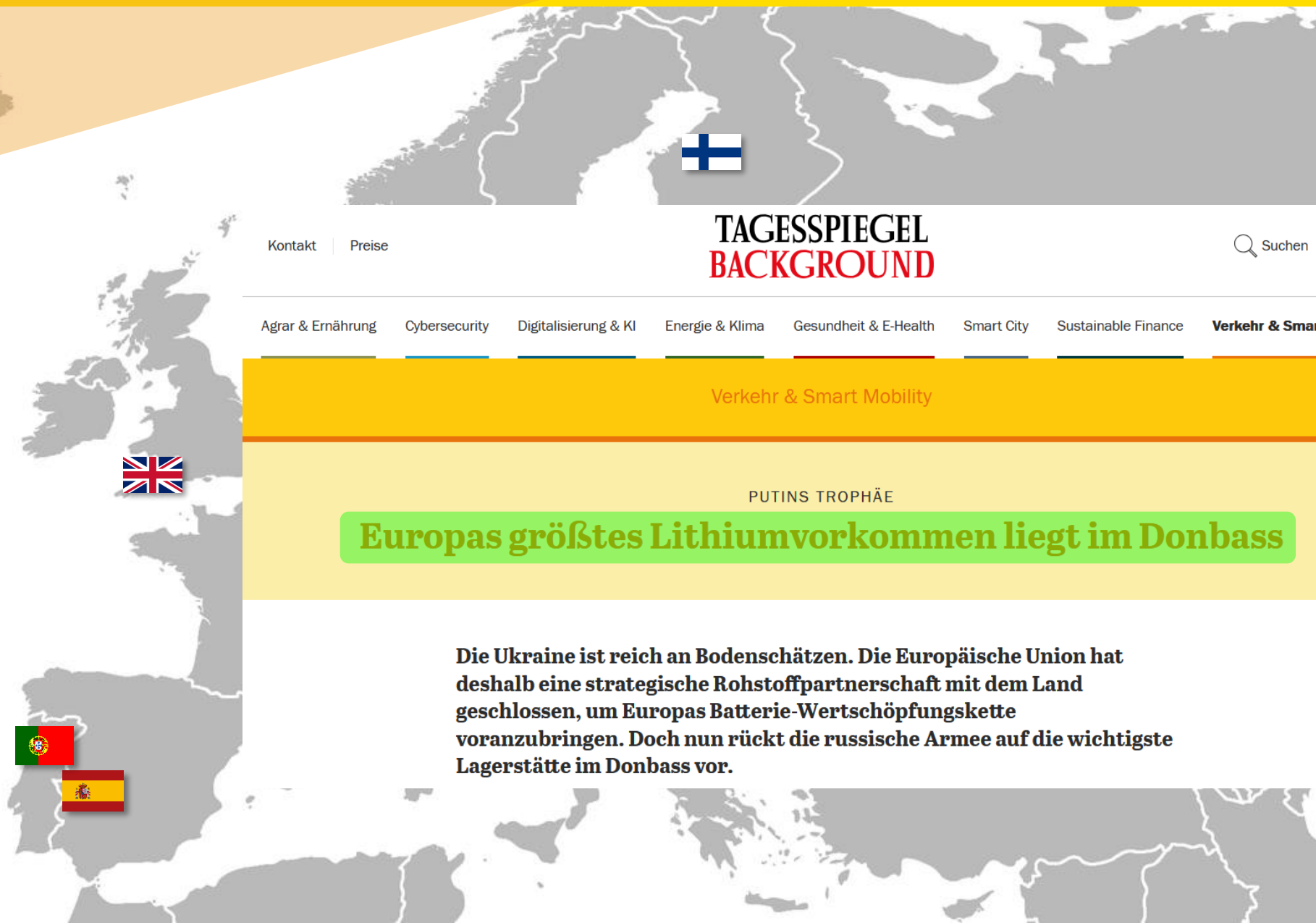
04 | LEGACY

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Verkehr & Smart Mobility

PUTINS TROPHÄE

Europas größtes Lithiumvorkommen liegt im Donbass

Die Ukraine ist reich an Bodenschätzen. Die Europäische Union hat deshalb eine strategische Rohstoffpartnerschaft mit dem Land geschlossen, um Europas Batterie-Wertschöpfungskette voranzubringen. Doch nun rückt die russische Armee auf die wichtigste Lagerstätte im Donbass vor.



blue News

Entertainment

Sports

A production plant for lithium hydroxide in the UK will be the first step towards reducing dependence on imports. According to the operating company Cornish Lithium, the English county of Cornwall is home to some of the largest deposits of the raw material required for the production of lithium-ion batteries in the whole of Europe.

ZINNWALD LITHIUM DEPOSIT IN EUROPEAN CONTEXT

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The European Investment Bank (EIB) is lending €150 million to Keliber Oy, a Finnish mining and battery-material processing company, to help the EU meet growing demand for lithium in the electrification of transport. The EIB credit to Keliber, subsidiary of the diversified mining and metals processing Group Sibanye-Stillwater, with Finnish Minerals Group (FMG) as a minority shareholder, is part of a €500 million financing package to establish mining and processing facilities in the **Kaustinen area in Finland**, which is among **Europe's largest lithium reserves**.





ZINNWALD LITHIUM DEPOSIT IN EUROPEAN CONTEXT



Sustainable, and resilient battery industry in Europe

Europe's largest lithium resource in Upper Rhine Valley

Vulcan's "Zero Carbon Lithium" project will be realised in the German part of the so-called Upper Rhine Rift, in the states of Baden-Wuerttemberg and Rhineland-Palatinate. The region contains Europe's largest lithium resource and one of the largest worldwide.



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POLITICS | CZECH REPUBLIC

Lithium: The Czech Republic's 'white gold' rush

Lubos Palata in Usti nad Labem
09/15/2023

Europe's biggest lithium deposit is located in the Czech Republic. The government in Prague recently outlined plans to boost the country's economy by mining and processing the resource. Not everyone is keen on the idea.



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LITHIUM
PROJECT
EXT

Größte Lithium-Lagerstätte Europas

Altenberg. Die Zinnwald Lithium GmbH verlegt seinen Hauptsitz nach Altenberg und präsentiert sich beim »Tag der offenen Tür« seinen neuen Nachbarn.

 Bilder

WOCHENKURIER



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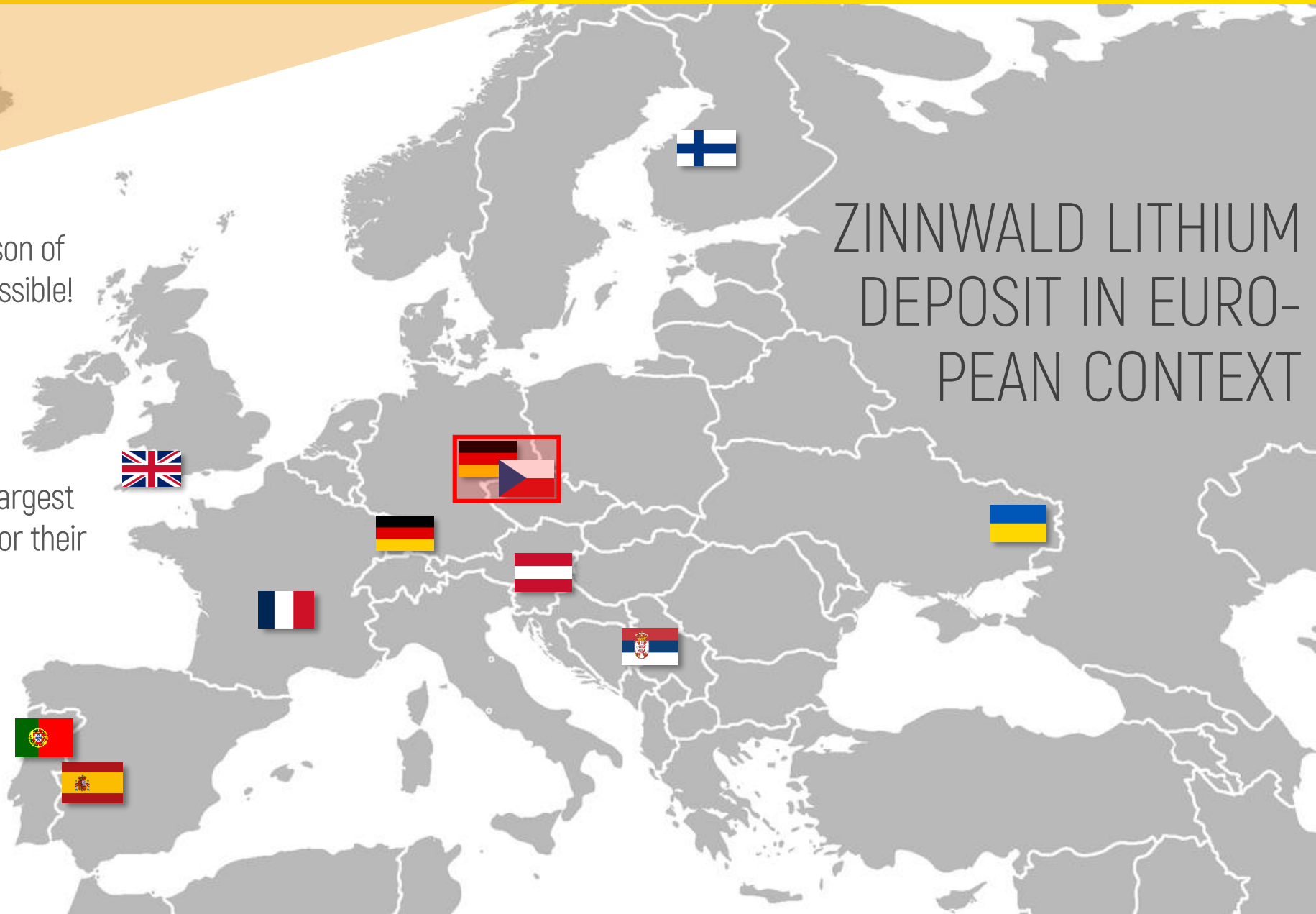
D LITHIUM
T IN EURO-
N CONTEXT

No valid comparison of deposit scales possible!

Seems like every mining company is claiming the title of "Europe's largest Lithium deposit" for their projects.

Pushing Lithium mining projects for stock market interests?

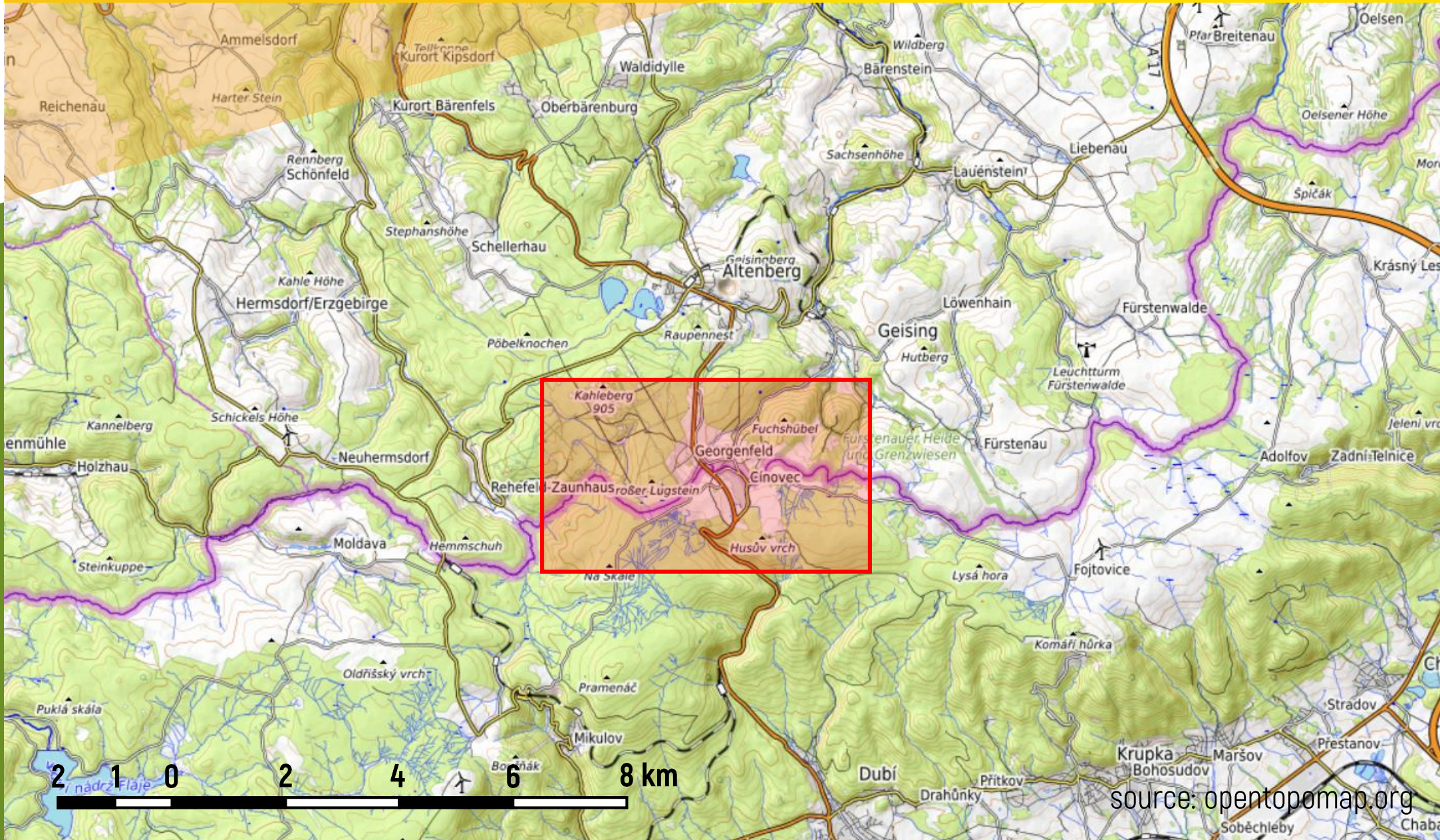
ZINNWALD LITHIUM DEPOSIT IN EUROPEAN CONTEXT



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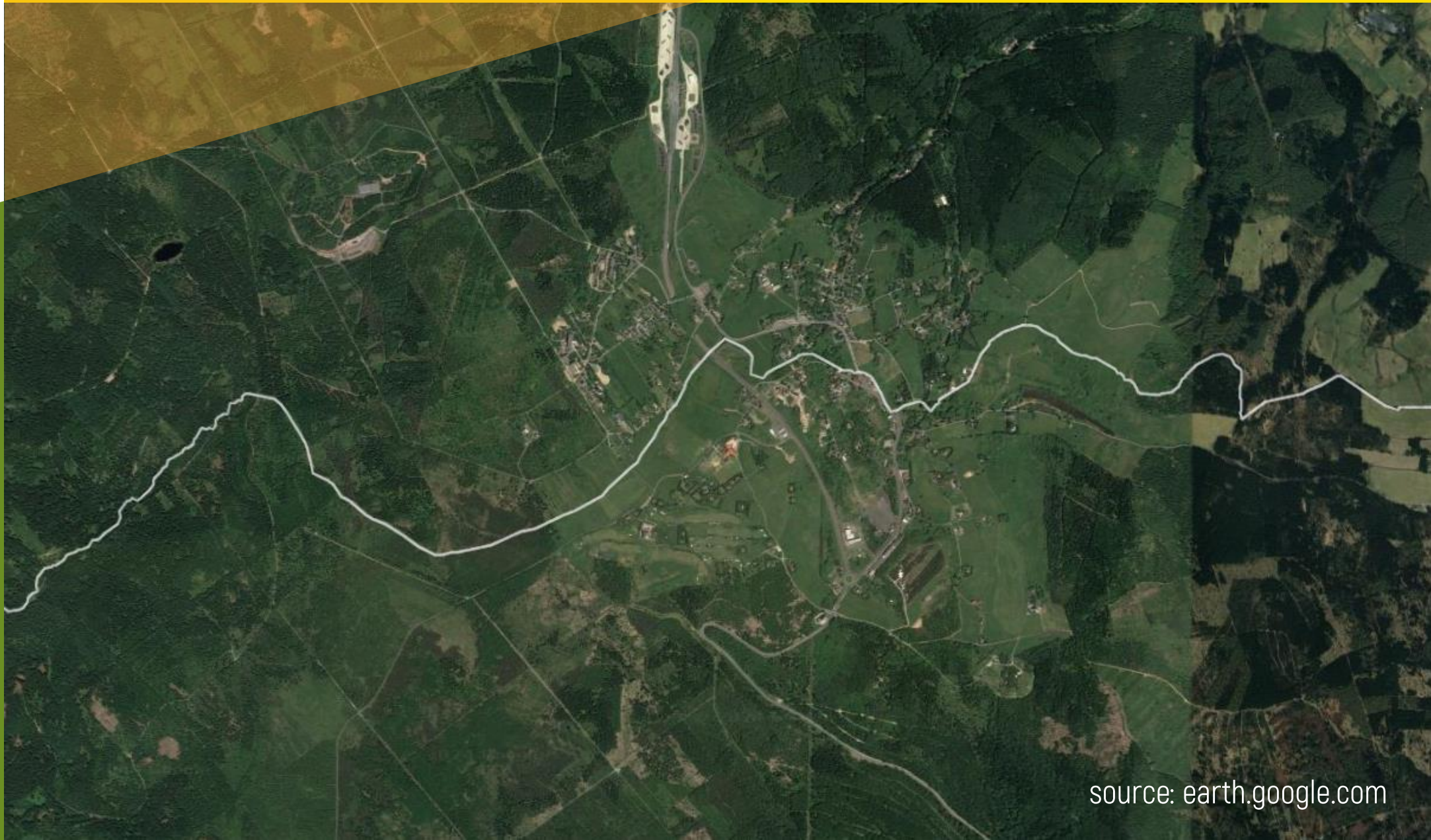


source: opentopomap.org



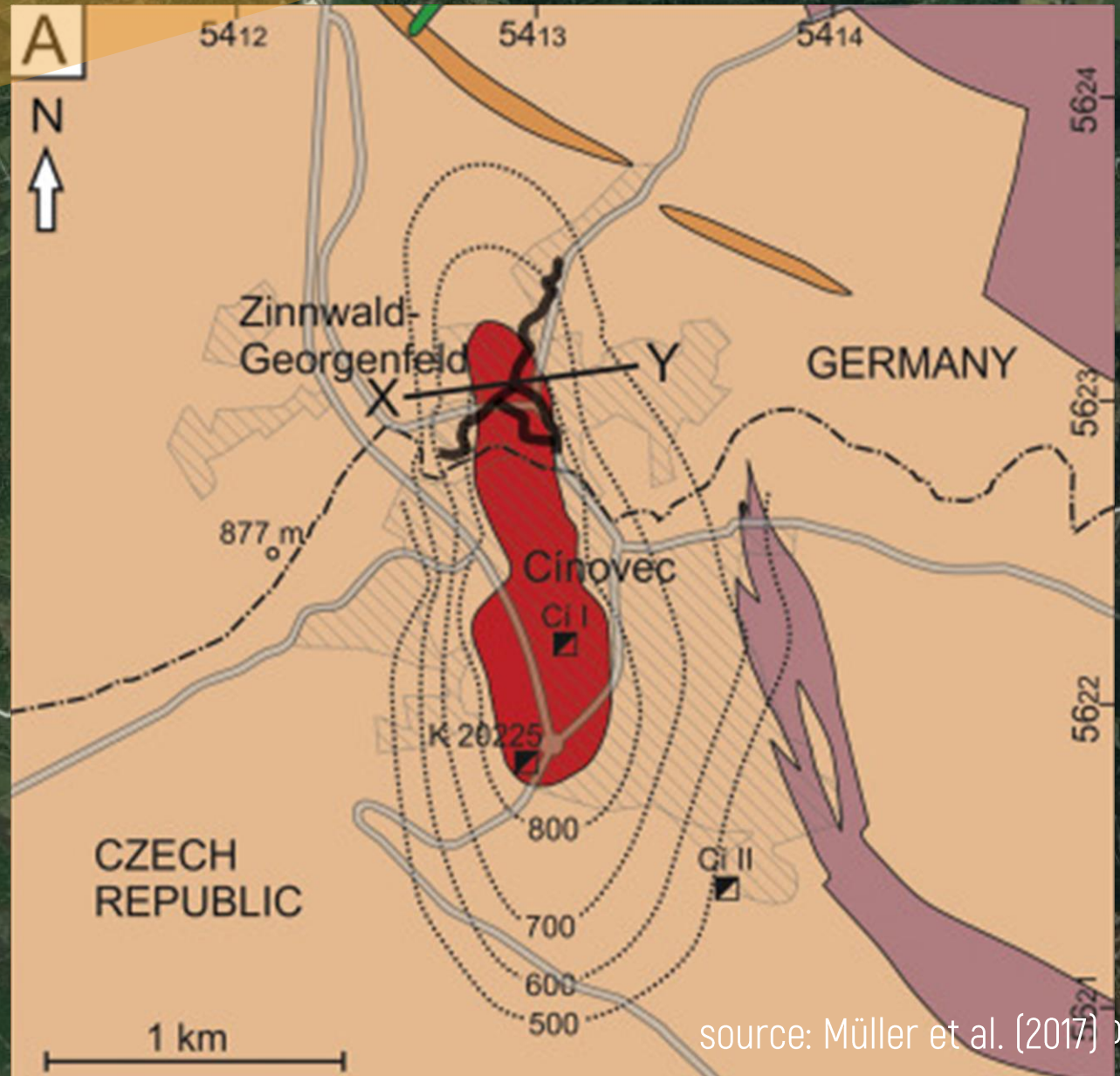
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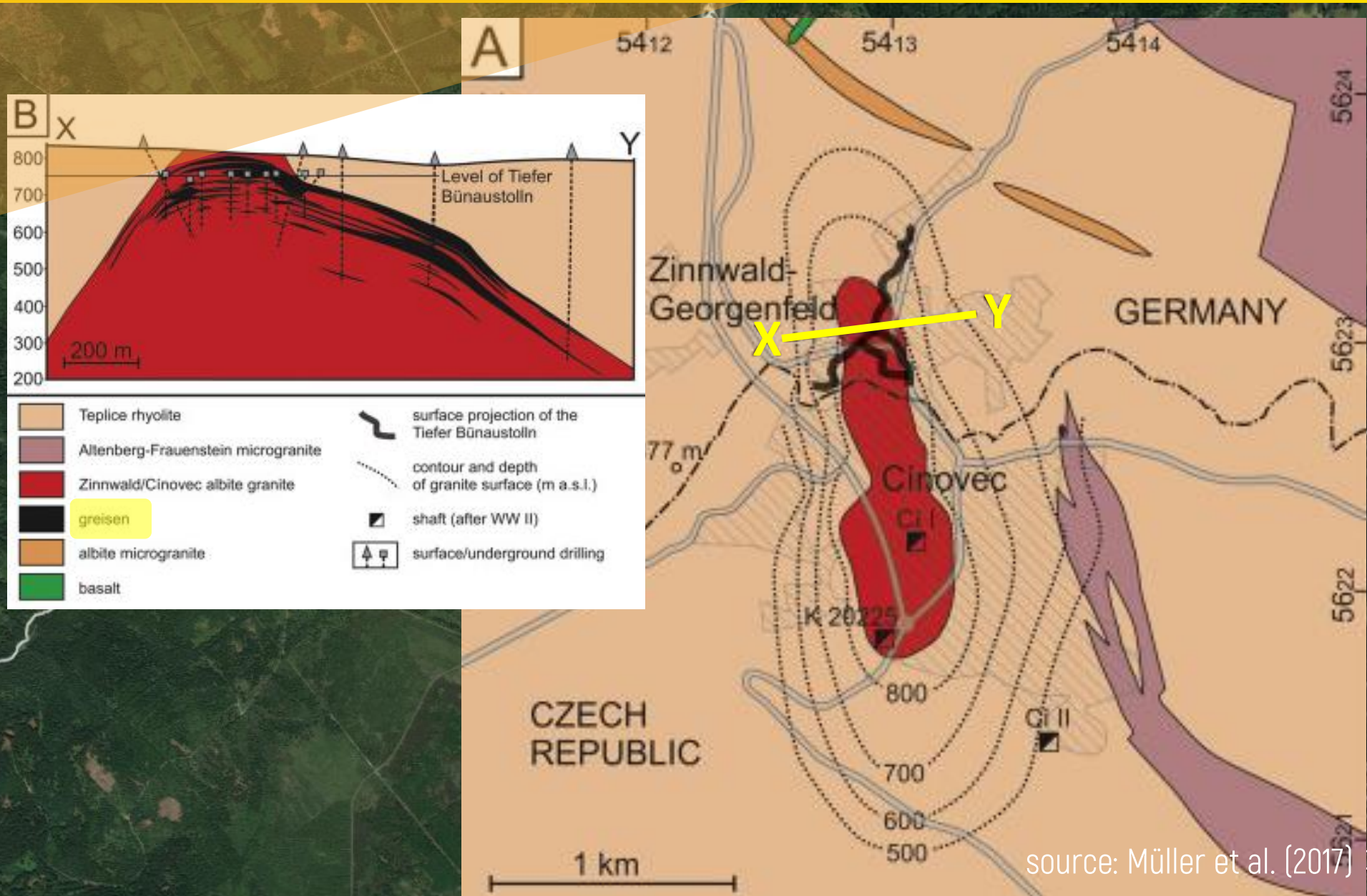


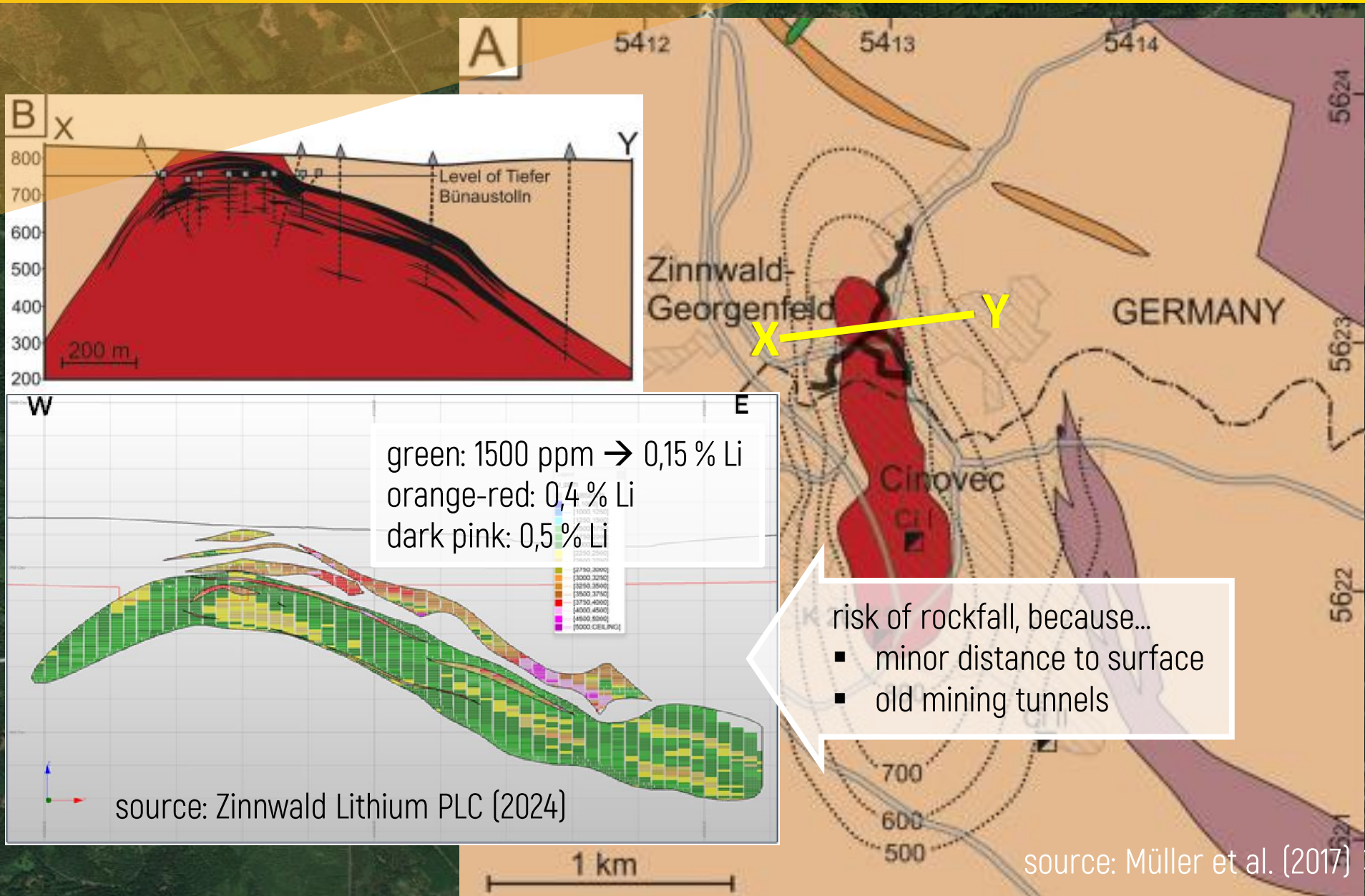
source: earth.google.com

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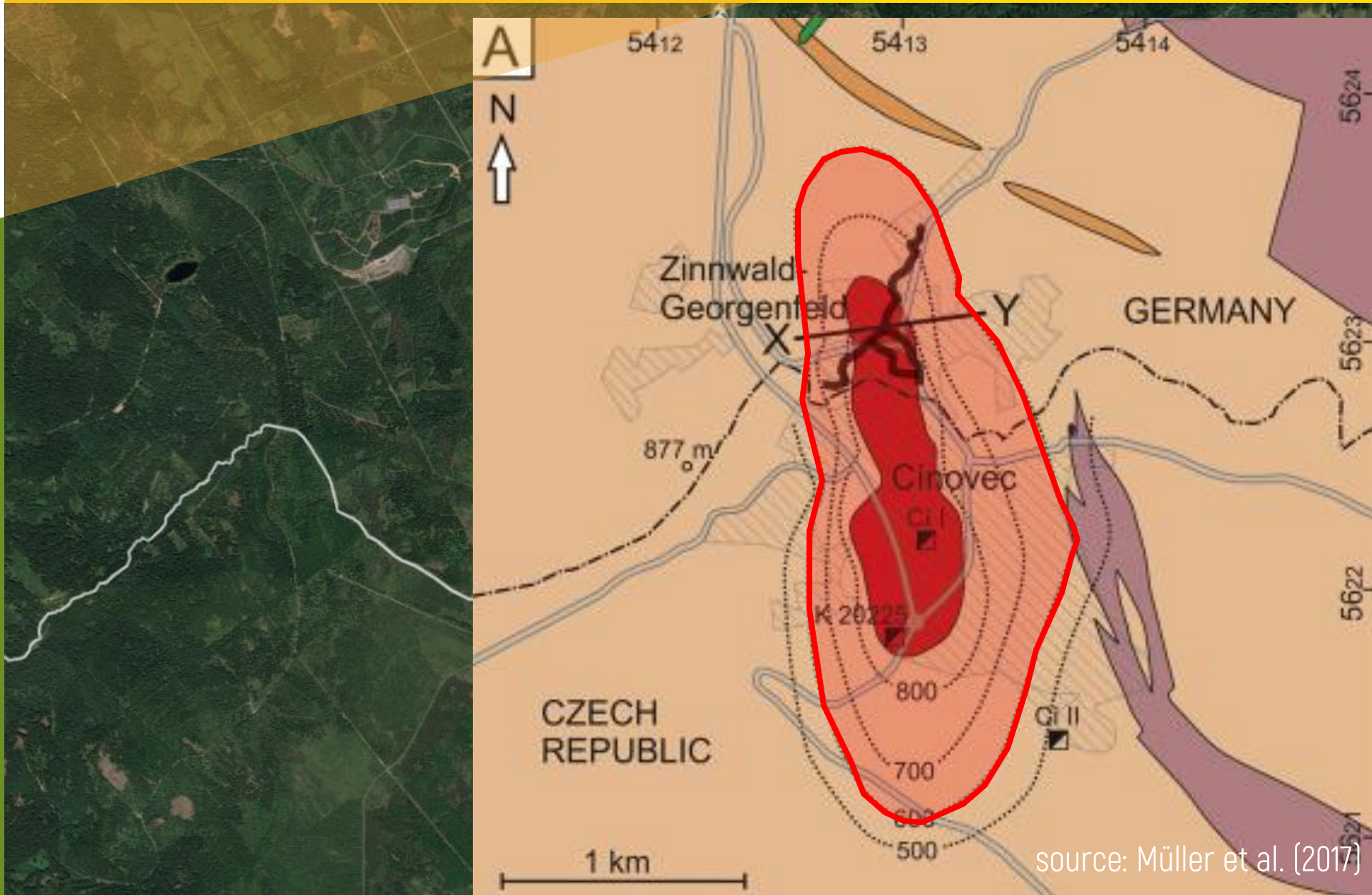


source: Müller et al. (2017) Google.com





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source: Müller et al. (2017) [google.com](#)



no cooperation
existing and
wanted
→ 1 Li-deposit,
but 2 chemical
processing
factories and
dumps planned



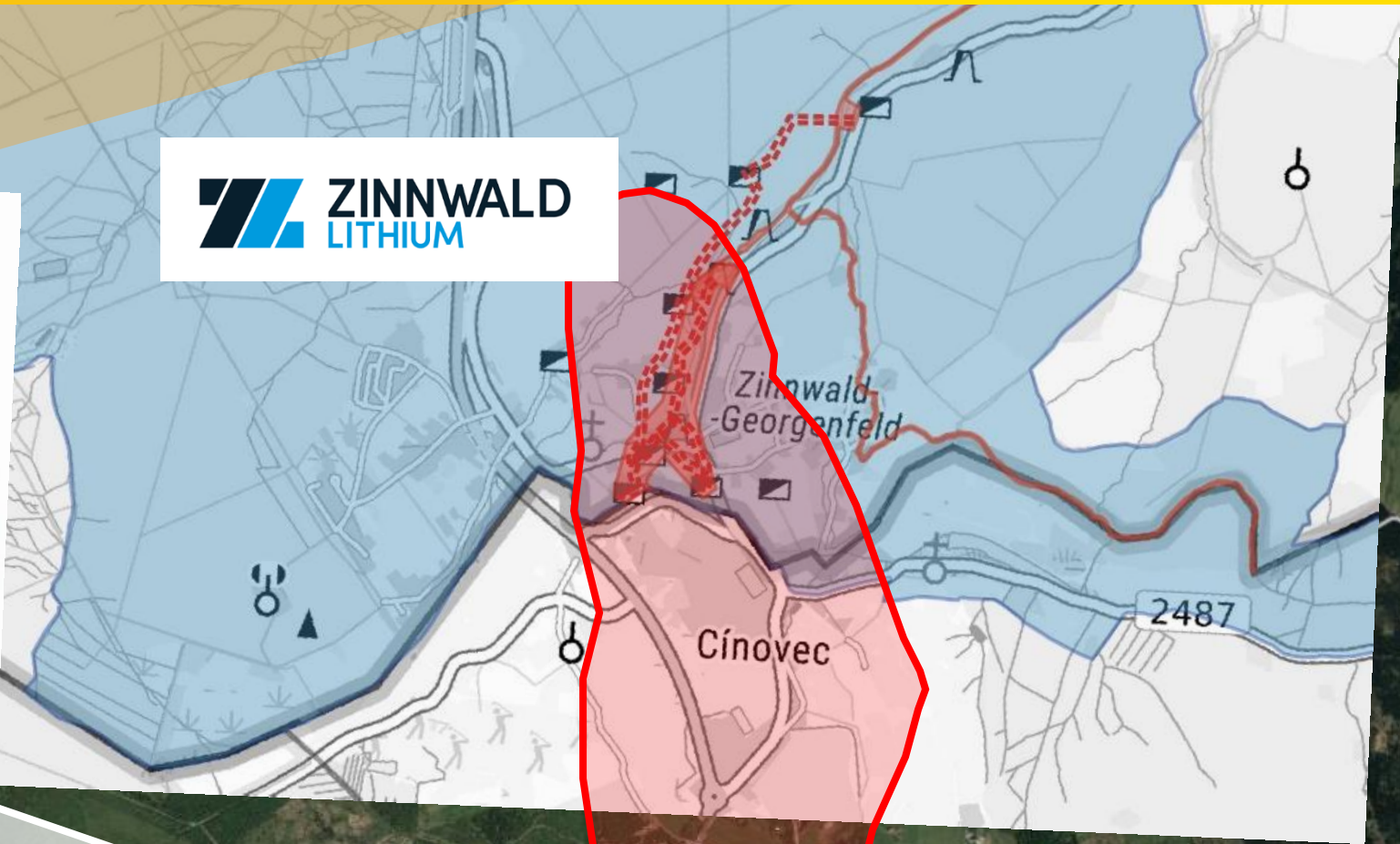
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**Montanregion
Erzgebirge/Krušnohoří**

Welterbe Montanregion Erzgebirge e. V.

- Welterbe/ světového dědictví/
world heritage
- Welterbe inkl. Pufferzone/ světového
dědictví Vč. nárazníkové zóny/ world
heritage incl. buffer zone
- - - Untertage/ podzemí/ underground

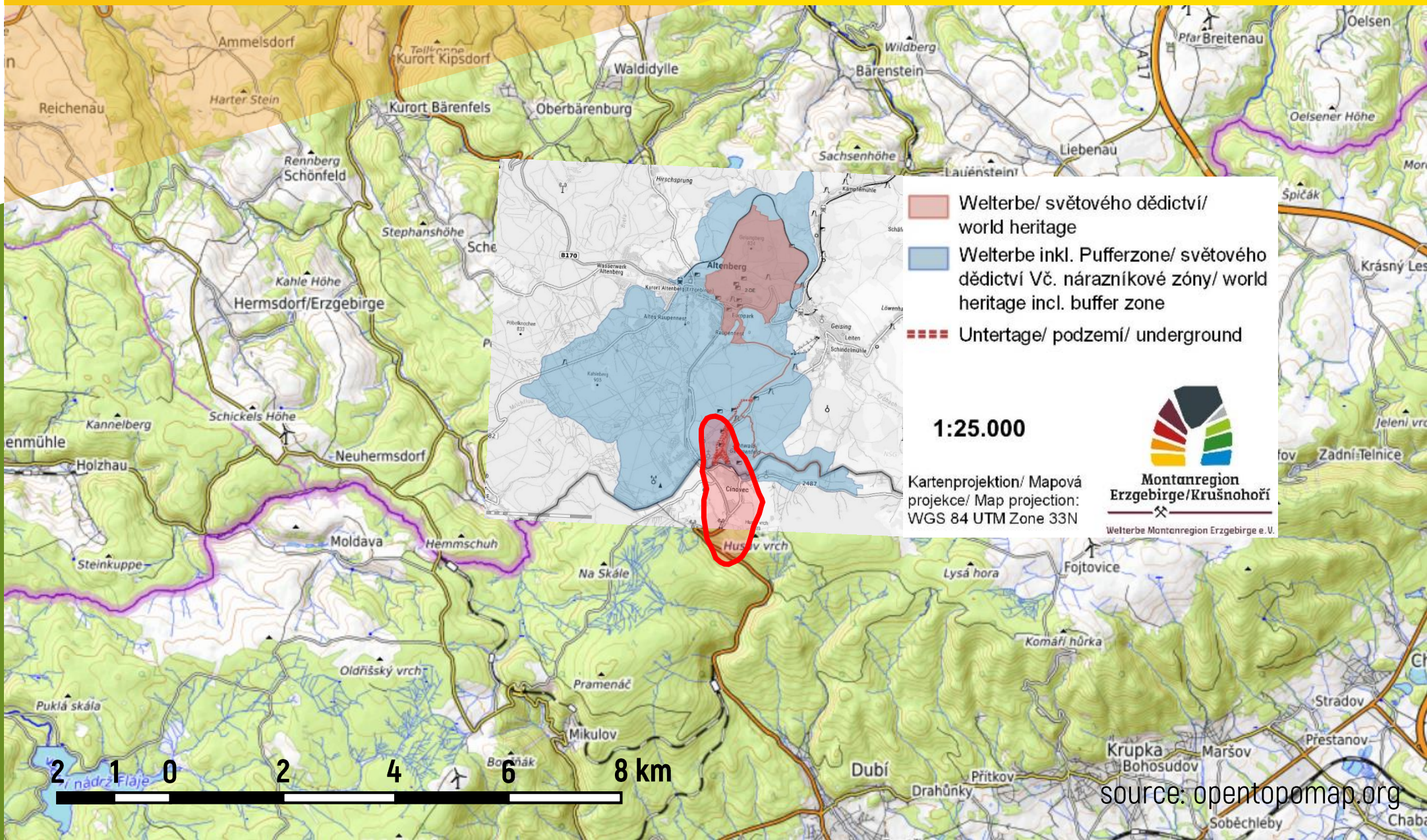



These mining projects
aren't compatible with
UNESCO world heritage
→ whole title endangered

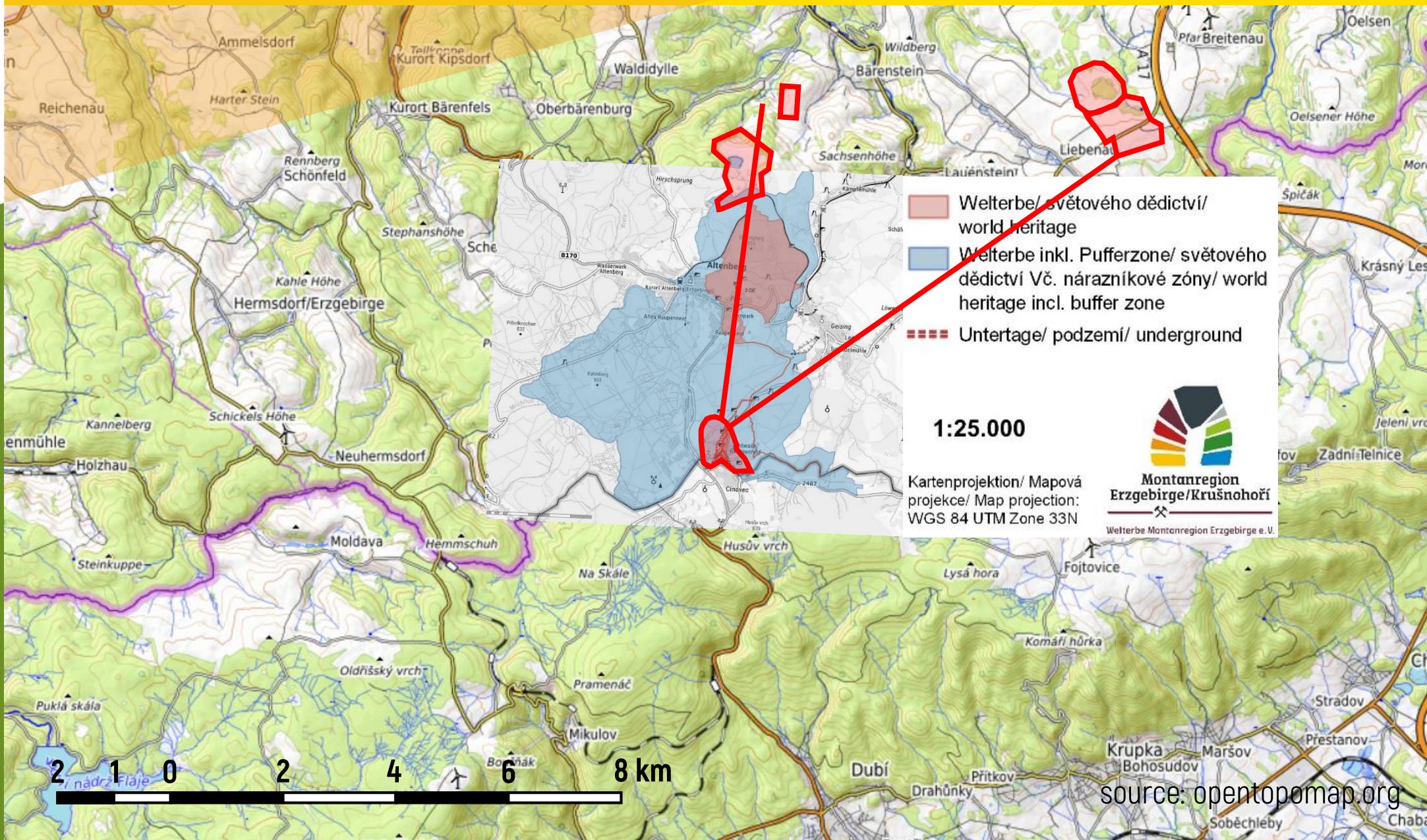


GEOMET
České Lithium pro Čistou Energii
Czech Lithium for Clean Energy

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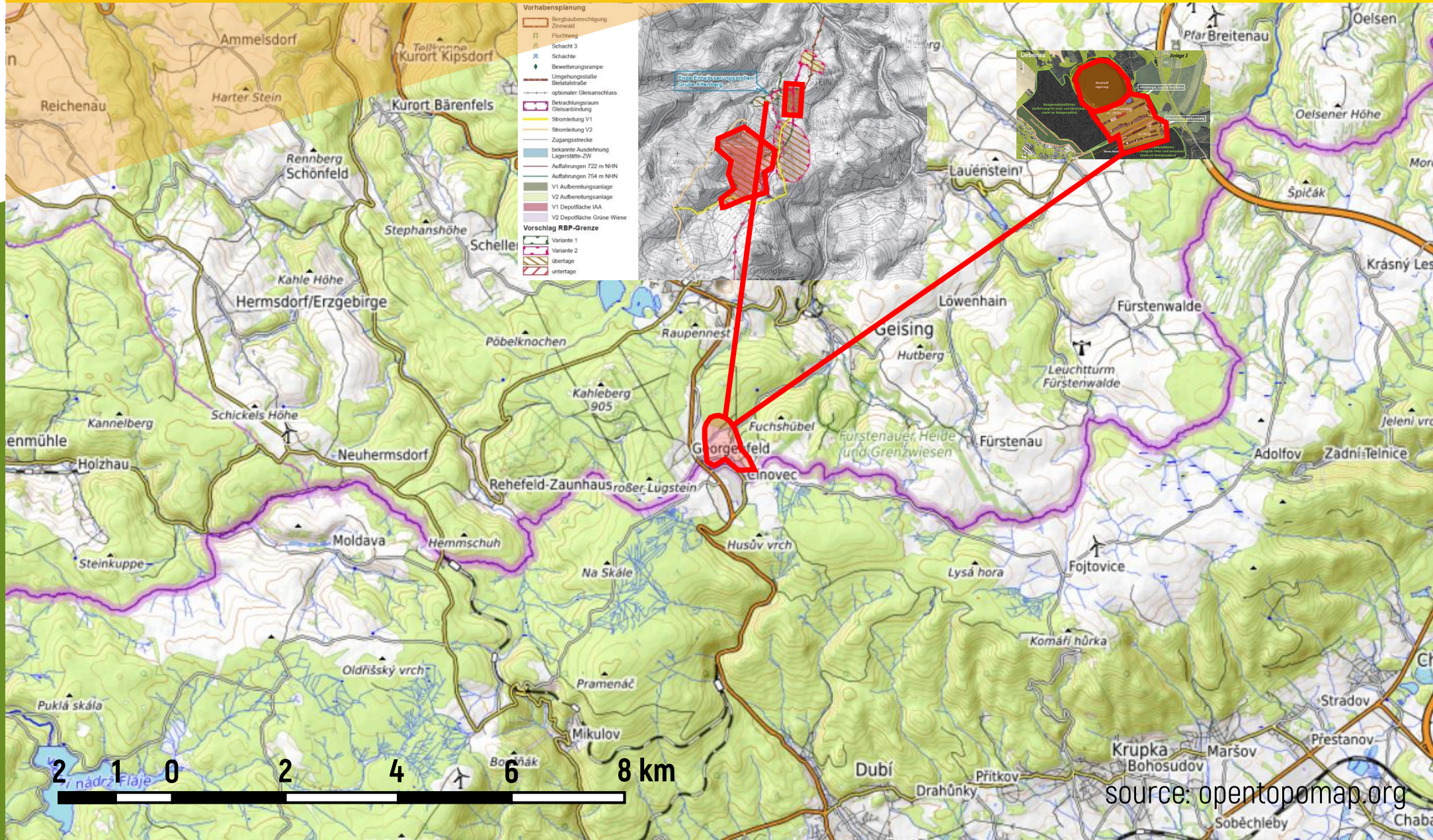
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source: opentopomap.org



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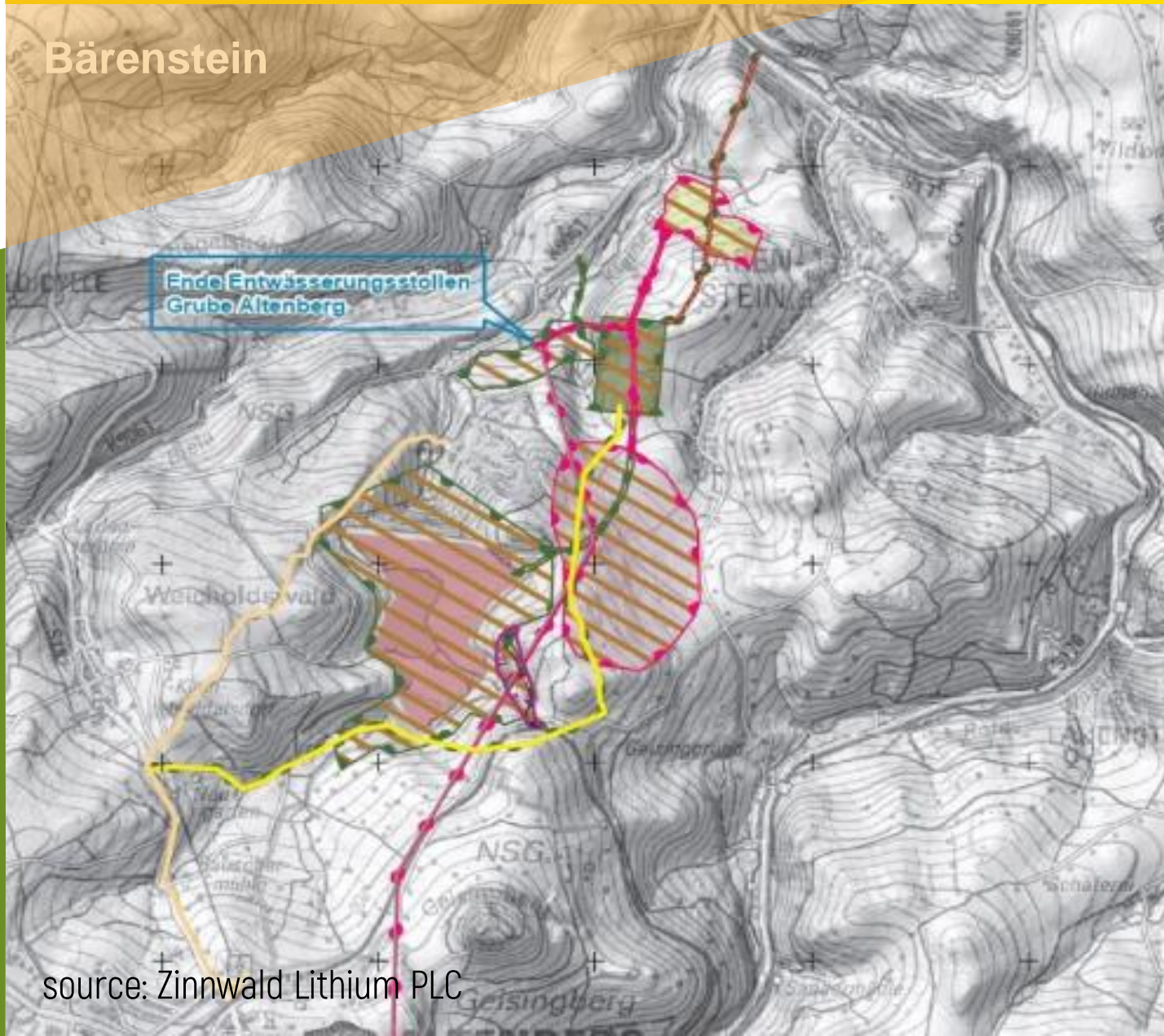
source: opentopomap.org



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source: Zinnwald Lithium PLC

Bärenstein



Vorhabensplanung

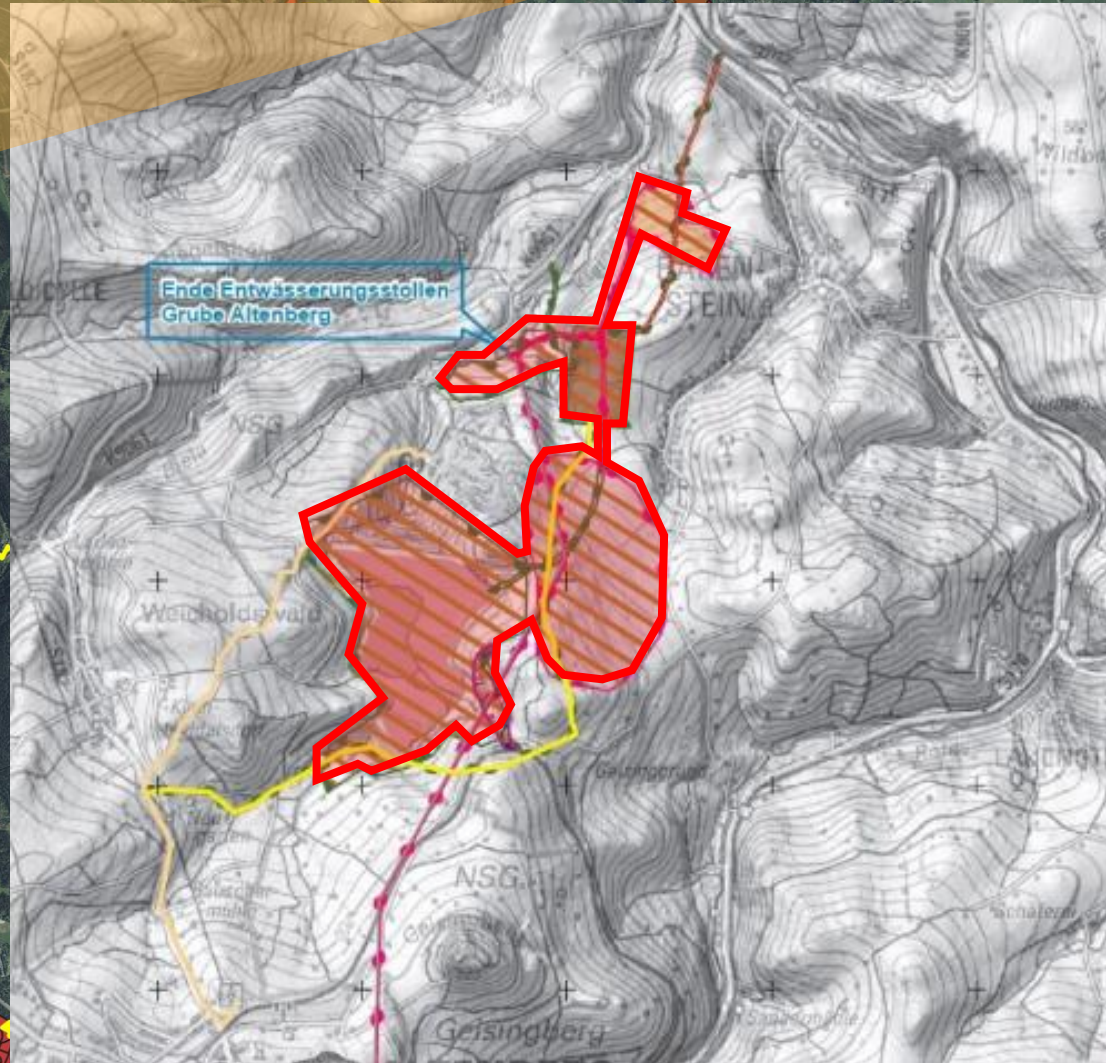
- Bergbauberechtigung Zinnwald
- Fluchtweg
- Schacht 3
- Schächte
- Bewetterungsrampe
- Umgehungsstaße Bielatalstraße
- optionaler Gleisanschluss
- Betrachtungsraum Gleisanbindung
- Stromleitung V1
- Stromleitung V2
- Zugangsstrecke
- bekannte Ausdehnung Lagerstätte-ZW
- Auffahrungen 722 m NHN
- Auffahrungen 754 m NHN
- V1 Aufbereitungsanlage
- V2 Aufbereitungsanlage
- V1 Depotfläche IAA
- V2 Depotfläche Grüne Wiese

Vorschlag RBP-Grenze

- Variante 1
- Variante 2
- übertage
- untertage

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source: Zinnwald Lithium PLC

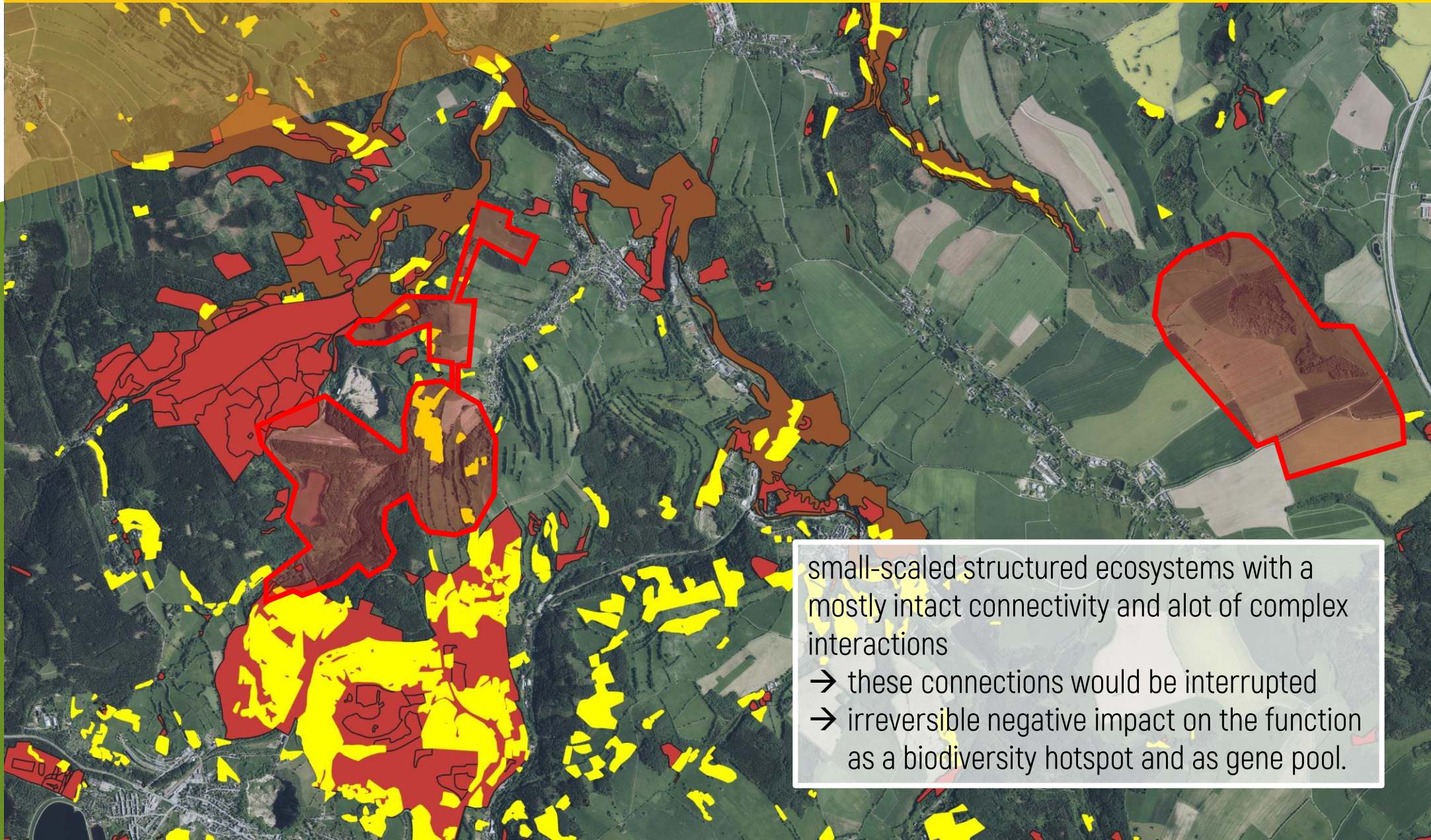




Special area of conservation (SAC)

Nature reserve

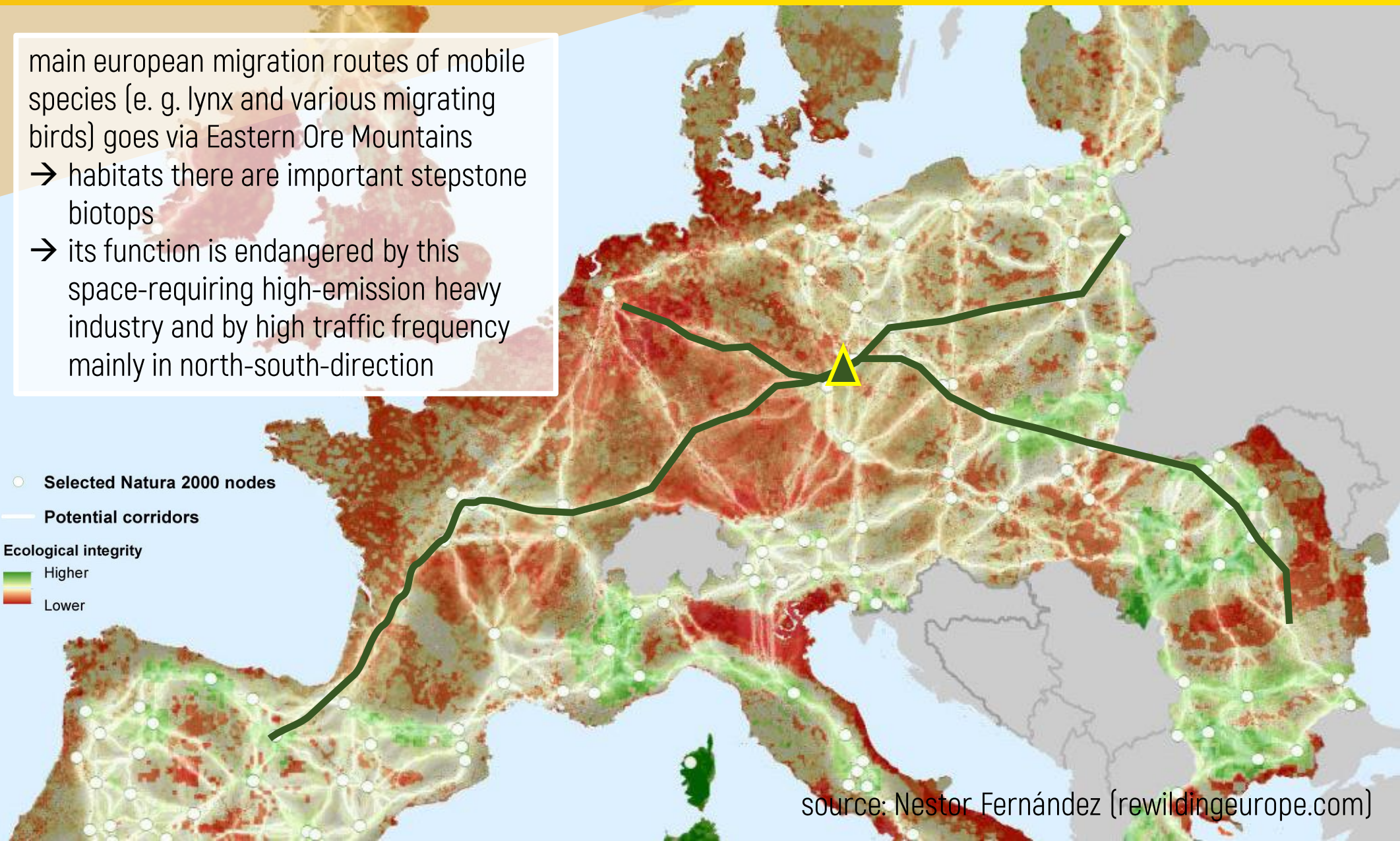
Cover habitat: mountain meadows

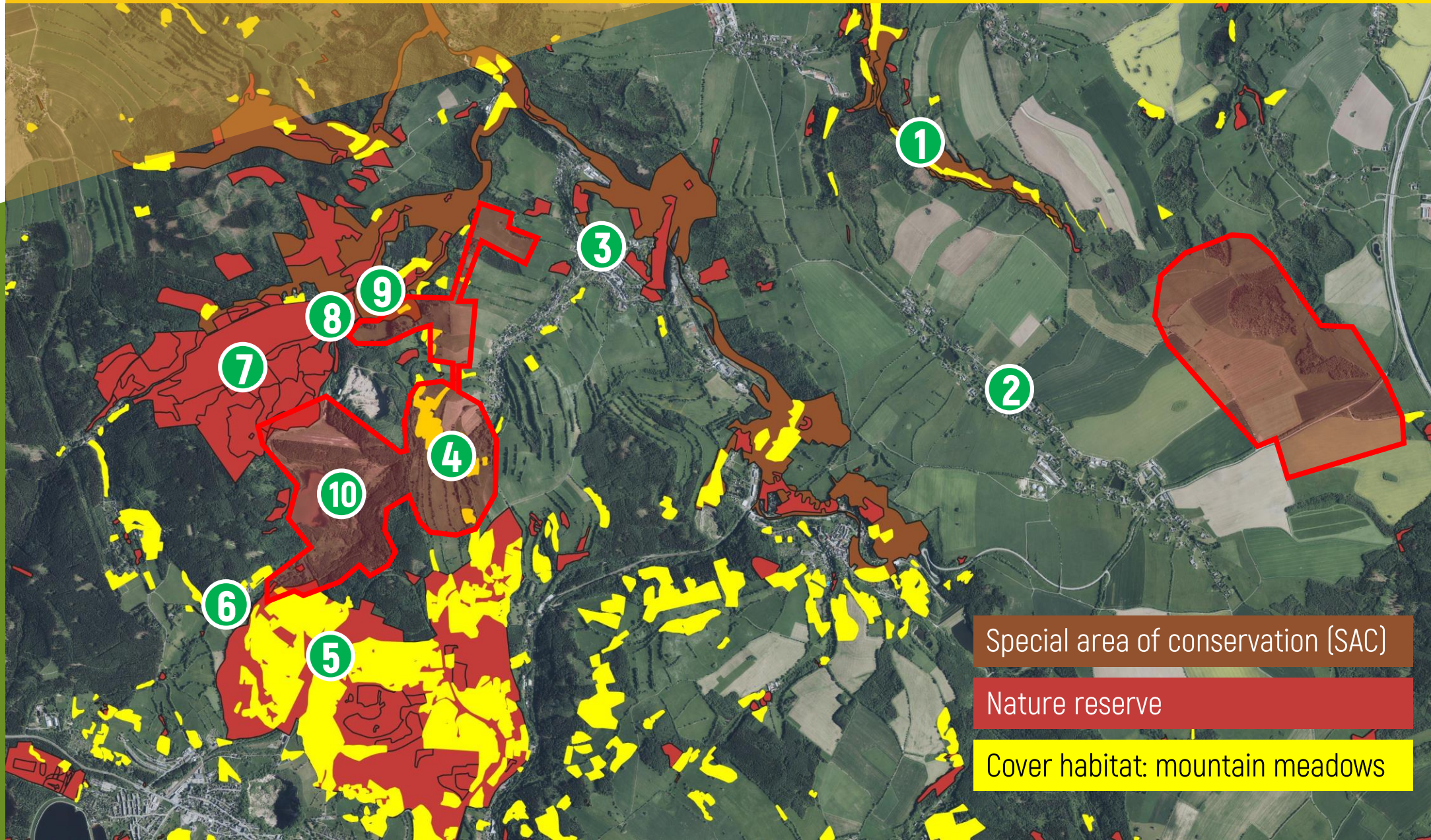


small-scaled structured ecosystems with a mostly intact connectivity and alot of complex interactions
→ these connections would be interrupted
→ irreversible negative impact on the function as a biodiversity hotspot and as gene pool.

main european migration routes of mobile species (e. g. lynx and various migrating birds) goes via Eastern Ore Mountains
→ habitats there are important stepstone biotops
→ its function is endangered by this space-requiring high-emission heavy industry and by high traffic frequency mainly in north-south-direction

- Selected Natura 2000 nodes
 - Potential corridors
- Ecological integrity
- Higher
 - Lower





Special area of conservation (SAC)

Nature reserve

Cover habitat: mountain meadows

1

VALLEY OF STREAM TREBNITZ

- longest undeveloped valley in ore mountains without settlement
- high water demand for processing and enormous soil sealing endangering
- hydrologic balance and function as watershed area with relevance for flood prevention
- pollution risk by mobilization of geogenic high concentrated toxic heavy metals because of mining



2

VILLAGE LIEBENAU

- elevation of more than 600 m above sea level
- exposed upper part of the Ore Mountains is a very windy region
- wind can carry the fine-ground waste material far away



2

VILLAGE LIEBENAU

- elevation of more than 600 m above sea level
- exposed upper part of the Ore Mountains is a very windy region
- wind can carry the fine-ground waste material far away



3

VILLAGE BÄRENSTEIN

- same situation and problems in Bärenstein
- above-surface infrastructure will be an industrial landmark
- because of explosion and dimensions visible from almost whole Eastern Ore mountains



© Lukas Häuser



© Lukas Häuser

3

VILLAGE BÄRENSTEIN

- same situation and problems in Bärenstein
- above-surface infrastructure will be an industrial landmark
- because of explosion and dimensions visible from almost whole Eastern Ore mountains



4

MEADOWS AND CLEARANCE CAIRNS

- total destruction of this landscape by disposal covering
- enormous earth movement because of planation for buildings necessary
- structured landscape with species-rich mountain meadows, tree-lines and hedges



5

NATURE RESERVE GEISINGBERG

- mountain meadow is one of the most fragile and species-rich habitat-type in central Europe
- more than 200 plant species and a large specialized fauna
- well-structured landscape with rare and endangered species (e. g. fire lily or hazel dormouse)



6

VALLEYSIDE OF BIELA

- mixture of extensive grassland, hedges and natural mixed forests
- habitat for disturbance-sensitive species (e. g. very rare corn crake)
- habitat for various specialized insect species (e. g. small copper)



7

WILDERNESS RESERVE WEICHOLDSWALD

- very special forest habitat without any forestry usage
- rare high concentration of dead wood and many old trees (e. g. white firs)
- open air laboratory for natural development of forest ecosystems without any human influence → endangered by heavy industry with air pollution, dust, noise, light, groundwater pollution



8

CULTURAL LANDSCAPE VALLEY OF BIELA

- extensively meadows care by handlabour of many busy volunteers
- one of the biggest nature preservation workcamps in Saxony is located there
- traffic of heavy goods transportation through the Biela valley → 400 heavy trailers everyday calculated → upgrade of the small road is necessary → no workcamps imaginable



9

FLOODPLAIN AND RIPARIAN FOREST

- natural river system way with banks and meanders
- dense riparian forest with old alder trees and habitat for common kingfisher
- risk of water pollution is threatening this sensitive habitat



10

RENATURED TAILING

- giant burden legacy of the last tin-ore mining period until the 90s
- 30 years of natural succession recovered the tailing plain and created a mosaic biotope of grassland, pioneer forests, wetland and a shallow lake (e. g. alpine newt)
- LMBV (responsible for this tailing) realizing conservation: clearance cairns and amphibian monitoring



TAILING AT 1991

- while operation it was a very life-hostile environment
 - flotation process left a toxic cocktail of chemicals and heavy metals
 - dangerous dust caused heavy lungs disease silicosis and increased cancer cases
- resent problem of this tailing: stability, leakage and toxic ingredients



TAILING TODAY –
AN ETERNAL
TASK

- touching this fragile system again could have catastrophic consequences
- LMBV detected high outflow of toxic arsenic and started to build a clarifying plant
- because of still ongoing aftercare the entrance of the whole tailing body is forbidden today
- another recent task: scientific research project „recombine“ for extraction of usable elements



source: BI Bärenstein



source: LMBV mbH (2024)



source: LMBV mbH (2024)

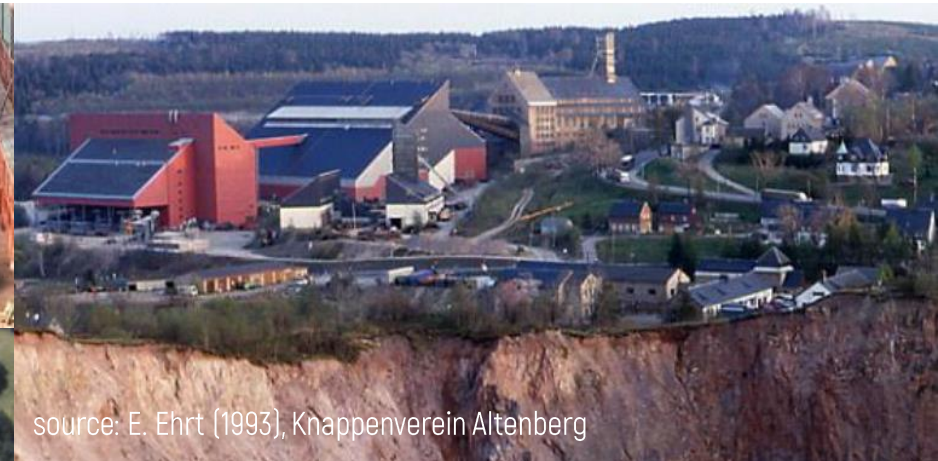
BACK TO THE PAST?

comparison to the processing factory of the company
Zinnerz Altenberg for tin extraction:

- in most productive times Zinnerz Altenberg extracted 1 million tonns ore
- Zinnwald Lithium PLC wants to extract in minimum 50 % more ore



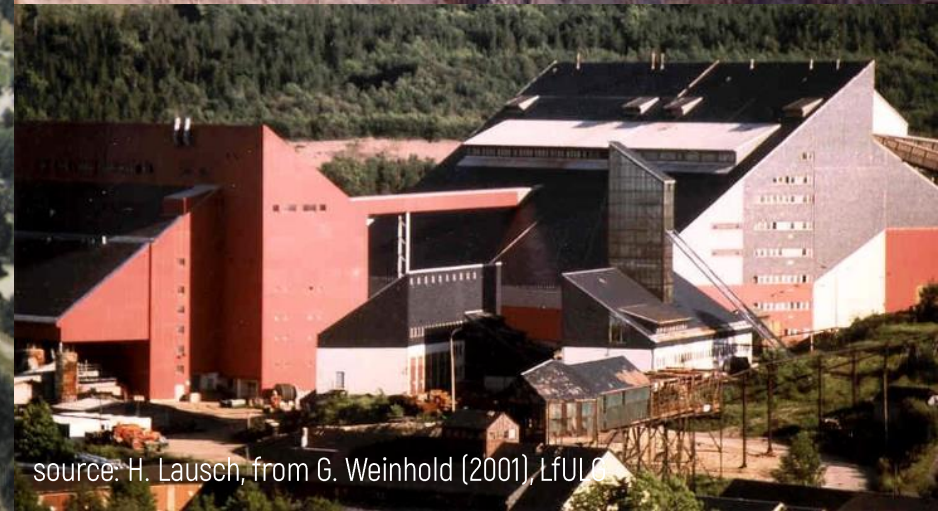
source: H. Lausch, from G. Weinhold (2001), LfULG



source: E. Ehart (1993), Khappenverein Altenberg



source: R. Büschel, from G. Weinhold (2001), LfULG



source: H. Lausch, from G. Weinhold (2001), LfULG

We define our future!

- How can we trust maximum profit-orientated companies which holding back important information and operating contradictive?
- Does it make sense to double the impact by having two companies for do mining on one single deposit?
- Is it reasonable to waste a touristic region and such rare and important ecosystems in times ore global species mass extinction and climate change for some pricy SUVs or sports cars?
- What is really the long term gain of such projects?
- Are we honest in terms of calculation without pricing in all these following eternal tasks of mining?

page 3: Investing News Network, URL: <https://investingnews.com/daily/resource-investing/battery-metals-investing/lithium-investing/lithium-reserves-country/> (nov 22, 2024)

page 4: Bezinga, URL: <https://www.benzinga.com/22/05/27203459/how-spain-is-set-to-become-a-lithium-giant-in-europe> (nov 22, 2024)

Page 5: Deutsche Welle, URL: <https://www.dw.com/en/lithium-mine-project-in-serbia-triggers-mass-protests/video-69912368> (nov 22, 2024)

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Page 27: Zinnwald Lithium PLC, aus URL: <https://osterzgebirge.org/de/2024/04/22/wendet-sich-das-blatt-bei-zinnwald-lithium-neue-variante-bei-liebenau/> (nov 22, 2024)

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