Zinnwald Lithium Mine Project, Germany

ESIA Scoping Report: Annexes

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8.1 ANNEX A. DETAILED INFORMATION ON BIODIVERSITY

This Annex presents additional detailed supplementary information to support the summary of the biodiversity baseline presented in the Scoping Report. This has been structured as follows:

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8.1.1 AOI DETERMINATION FOR BIODIVERSITY

This section presents further detailed supplementary information regarding the determination of the Area of Influence (AoI) for biodiversity.

The AoI for biodiversity was ecologically determined and defined to encompass wider distributions of potentially affected biodiversity features and the ecological patterns, processes, and functions that are necessary for maintaining them throughout this distribution. The biodiversity AoI for the Project encompasses:

- The direct footprint of the Project infrastructure based on the preliminary layout for the underground mine, surface activities/infrastructure, the underground tunnel and the processing plant and TSF at Liebenau. This covers direct impacts to ecosystems, habitat and vegetation as well as fauna utilizing the respective habitats.
- The potential area affected by impacts that typically occur beyond the Project footprint (e.g. linked to soil, air, water emissions and pollution) as well as indirect effects such as visual, noise and vibration disturbance to fauna (wildlife) in particular.

ERM conducted a literature review on the topic of biodiversity AoI for the mining sectors, in order to inform the distances recommended, particularly impacts that could extend beyond the immediate Project footprint.

A key reference is the United National Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) who prepared a technical briefing in 2021 (UNEP-WCMC, 2021[1]) addressing the AoI for biodiversity for site-based operations based on exposure to direct impacts, with a second briefing document addressing indirect impacts (UNEP-WCMC, 2022[2]) but the latter offers no explicit AoI/buffer distances addressing indirect impacts of mines on biodiversity. The literature review and research conducted by UNEP-WCMC identified the typical ranges of AoI for biodiversity based on distance or effect for biodiversity receptors (including ecosystems, habitats and wildlife species) related to terrestrial mining pressures which vary

[1] UNEP-WCMC (2021). The Area of Influence of site-based operations – Direct Impacts. Cambridge, UK.
[2] UNEP-WCMC (2022). The Area of Influence of site-based operations – Indirect Impacts. Cambridge, UK.

depending on biome and type of impact considered (i.e. pollution of soil, air, freshwater, habitat destruction, noise/activity disturbance and infrastructure construction and operation).

The technical briefing considered ranges of AoI for biodiversity from 80 m up to 70 km depending on the biome type and pressure/impact, with the average AoI defined as 10.5 km and a "*10 km buffer considered likely to cover the majority of direct impacts of terrestrial mines in most habitats*" (UNEP-WCMC, 2021). This is however a very precautionary buffer that accounts for large impacts as a result of deforestation and lost habitat connectivity for example, which is not of much relevance to the Zinnwald Lithium mining Project given its context.

Probably of more relevance is the average AoI for biodiversity-related impacts for the 'Temperate Broadleaf and Mixed Forests' biome, being 1 km (ranging from 100 m linked to habitat destruction, up to 4 km linked to soil pollution). Table 1 below summarises the results of the technical briefing for terrestrial mining pressures/impacts and AoI recommended ranges for the Temperate Broadleaf and Mixed Forests biome.

TABLE 1 SUMMARY OF INDICATIVE AOI RANGES BASED ON DIFFERENT PRESSURES/IMPACTS ON BIODIVERSITY FOR THE TEMPERATE BROADLEAF AND MIXED FORESTS BIOME.

Pressure	Impact	AoI: lower range	AoI: upper range
Noise & Activity	Modified Faunal Behavior	No data	No data
Soil Pollution	Habitat Degradation	-	4 km
Air Pollution	Habitat Degradation	No data	No data
Freshwater Pollution	Habitat Degradation, Modified Wildlife Abundance	No data	No data
Habitat Destruction	Modified Wildlife Abundance (mammals, birds, herpetofauna, invertebrates)	0.1 km	1 km

Source: adapted from UNEP-WCMC (2021)

It must be noted however that the data used in the UNEP-WCMC report to inform the AoI ranges and average for the Temperate Broadleaf and Mixed Forests biome is limited to only a few dated studies (from 2006 and 2013) that consider habitat destruction effects on animal abundance only, with impacts related to air and water pollution and noise/activity not considered. ERM therefore also considered other published information linked to the 'distance of effect' as this relates to the various aspects of the Project and anticipated biodiversity receptors, for the exploration, construction/mine establishment, operational, decommissioning and closure phases of the mining project.

Based on this understanding of typical distance of effect ranges for key biodiversity receptors ERM has recommended a preliminary AoI for biodiversity that is designed to be conservative at this stage given that there are several unknowns with respect to aspects that influence the AoI defined for biodiversity, including:

- The AoI for surface water impacts and the potential area affected by aquifer drawdown as a result of dewatering;
- Noise propagation distance;
- Vibration effect distance;

- Artificial lighting area of effect;
- Air quality / dust area of effect.

This is documented in Table 2 that follows which suggests that there will be differences in the distance of effect for terrestrial and aquatic biodiversity receptors that warrants two separate AoIs, one addressing terrestrial ecosystems, habitats and species and a second for aquatic:

- The recommended preliminary **AoI for terrestrial biodiversity is a 1 km buffer radius** from the Project infrastructure footprint/layout;
- The recommended preliminary **AoI for aquatic biodiversity is a 2 km buffer radius** (aligned with the hydrological/surface water AoI).

IMPORTANT NOTE: Conservative AoI Distances

Note that these distances are designed to be more precautionary and conservative at the Scoping phase of the ESIA, where Project specifics and information concerning noise/vibration modelling and hydrological impacts are preliminary or scarce at this early stage. The more conservative AoI distances are intended to ensure that potential receptors of impacts are not overlooked, and this may result in some potential risks/impacts being overstated or the area considered in terms of receptors identification and assessment being larger than necessary.

During the ESIA, once more Project-specific information becomes available to inform risks and impacts descriptions and distances of effect for sensitive receptors, the preliminary AoIs for terrestrial and aquatic biodiversity will be reviewed and revised as necessary. This may result in the distances being reduced.

The AoI was also sense-checked by considering the effective investigation area (‘Untersuchungsräume’ in German) recommended by the local consultants for the planned faunal baseline surveys/investigations forth Liebenau processing plant and TSF site, from the document titled “Zinnwald Lithium Projekt: Leistungsbeschreibung für Biotoptypenkartierung und faunistische Untersuchungen” [English translation: *Zinnwald Lithium Project - Terms of Reference for biotope/habitat mapping and faunal investigations*], dated 02 October 2024. In this document, the investigation areas for various faunal groups is specified based on the national approach and methodology, with the technical specification provided by the UNB and methods based on the report on ‘*Performance descriptions for faunistic investigations in connection with landscape planning specialist contributions and species protection contributions*‘ by the BMV (2014[3]). These investigation areas are summarized in Table 3.

This suggests that the maximum AoI recommended for terrestrial biodiversity (1 km buffer radius) aligns with the investigation areas for fauna to accommodate the maximum investigation area of 1000 m for waterbirds and birds of prey in particular. In this way, the baseline data for biodiversity that has either already been collected or is still in the process of being collected for the Liebenau site, considers the same spatial area and can therefore be used to inform the assessment of biodiversity impacts during the ESIA. *It must be noted however that during the ESIA, the baseline and impact assessment will consider the individual investigation area distances to assess each faunal group separately (e.g. for breeding birds, the baseline and assessment of impacts will consider a distance of effect up to 500 m, to align with the national recommendations in Germany)*.

[3] BMV (Bundesministerium für Verkehr, Bau und Stadtentwicklung), 2014. Leistungsbeschreibungen für faunistische Untersuchungen im Zusammenhang mit landschaftsplanerischen Fachbeiträgen und Artenschutzbeitrag. [English translation: *Performance descriptions for faunistic investigations in connection with landscape planning specialist contributions and species protection contributions*].

TABLE 2 PRELIMINARY BIODIVERSITY AOI RECOMMENDATIONS BASED ON DISTANCE OF EFFECT RELATED TO MINING PRESSURES AT EACH PHASE OF THE PROJECT.

Mining pressures	Relevant Mining Infrastructure / Activities			Terrestrial Biodiversity AoI	Aquatic Biodiversity AoI	Notes / Justification
	Surface facilities	Underground mine	Underground tunnel			
Habitat destruction	✓			Immediate footprint and directly adjacent areas		• It is considered appropriate that the AoI for the Project encompass the direct footprint of the Project infrastructure based on the preliminary layout as well as all temporary work areas (such as access roads, worker camp sites, equipment/material laydown areas, soil/material borrow pits, stockpile areas and any dump sites). • This covers impacts to habitat and vegetation (including any threatened plant species) as well as direct impacts to fauna. • This excludes impacts to habitat connectivity, which would originate at the point of direct impact/destruction but may affect habitats more broadly and would be site-specific.
Disturbance due to noise, vibration, artificial light	✓	*	*	1 km	1 km	• It is recommended that the AoI also considers the potential for visual, noise and vibration disturbance to fauna (wildlife). Increased human activity in the area, associated mainly with construction phase when this will be the most intensive, can result in disturbance as a by-product of activities, including that associated with increased noise and vibrations from heavy machinery and artificial light. • There are few studies available on the distance to which fauna are typically displaced during the construction phase of projects. The displacement of fauna during construction is considered to be mostly associated with noise (for birds and non-volant mammals) and vibration for herpetofauna (reptiles). • The literature that was reviewed (such as Kwon et al., 2018[4]), suggests there is a strong possibility that species could be disturbed by noise up to a radius of approximately 250 m from noisy sites, and outside of the 250 m noise level from activities should have been attenuated to background noise levels. • In terms of displacement effects (change in abundance and behavior) on species including mammals, birds and herpetofauna in particular, distance of effect typically accounts for both direct (e.g. noise) and indirect (e.g. reduced habitat quality) impacts. NatureScot (2022[5]) indicate a protection zone buffer distance that ranges from 50m up to 1000m for breeding birds, for example. • The range of disturbance to optical and/or acoustic disturbance factors depends on the sensitivity of the idnivudal species, with species partciaurly sensitive to distuabce effects typically being disturbed up to a distance of 500m according to Bernotat *et al*. (2018[6]). • Asterix* for underground facilities/activities (mine, tunnel) it is not foreseen that these will be major sources of noise/vibration as they are a significant distance below ground and noise/vibration effects will be attenuated.
Air quality (linked mainly to dust)	✓	*	*	500 m	500 m	• Natural England (2018[7]) recommend a distance of 200 m to account for air quality impacts around roads. • Based on other available literature such as QMJ (2005[8]) and Ministry for the Environment (2016[9]), dust emissions and general fallout distance for intermediate sized particles can reach distances of 350 m up to 500m and this is typical of road dust (fine particles can travel further from source but depends on various factors including particle size, wind speed, gusts, wind direction and other ambient environmental conditions). • Asterix* for underground facilities/activities (mine, tunnel) it is not foreseen that these will be possible sources of air emissions.
Soil/water pollution due to emissions	✓			-	150 m (but can extend further)	• The Nature Conservancy (2015[10]) recommend ecological buffer widths to minimise impacts to fish and wildlife habitat, that range from 10 m to 150 m for most fish, amphibians, reptiles, birds and mammals. • Macfarlane & Bredin (2017[11]) recommend minimum buffer zones for aquatic habitats (wetlands, rivers) based on sector/activity type. For mining activities, a minimum buffer of 25 m is recommended. It is however acknowledged that mining impacts on surface water can extend larger distances depending on water resource connectivity and site context. • Direct emissions of pollutants to soil/water are not anticipated under normal operations with suitable risk mitigation in place, with suitable precautions and treatment of waste/wastewater, etc. This does not account for accidental emissions/abnormal events, which are likely to be very rare and unlikely.
Hydrological impacts:		✓	✓	-	2 km	• Dewatering and groundwater drawdown is known to potentially impact on the shallow aquifer and can affect stream flows in watercourses as swell as wetlands where there is a significant connection to the groundwater. Reduced stream flows and impacts on shallow aquifer levels can affect the

[4] Kwon, N., Song, K., Lee, H.-S., Kim, J. & Park, M. (2018). Construction Noise Risk Assessment Model Focusing on Construction Equipment. Journal of Construction Engineering and Management, vol. 144. Available online at: https://www.researchgate.net/publication/324259324_Construction_Noise_Risk_Assessment_Model_Focusing_on_Construction_Equipment

[5] NatureScot (2022). Disturbance Distances in selected Scottish Bird Species. Online at: https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance

[6] Bernotat *et al.* (2018). BfN-Arbeitshilfe zur arten- und gebietsschutzrechtlichen Prüfung bei Freileitungsvorhaben. Bundesamt für Naturschutz (Hrsg.). BfN-Skripten 512. [English translation: '*BfN - Working aid for the assessment of species and area protection law in overhead power line projects. Federal Agency for Nature Conservation* (ed.)'].

[7] Natural England (2018). Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations. June 2018. Online at: https://publications.naturalengland.org.uk/publication/4720542048845824

[8] QMJ (2005). Controlling Dust and Erosion in Quarries. Article based on a White Paper produced by Air Spectrum Environmental. Online at: https://agg-net.com/resources/articles/environment-restoration/controlling-dust-and-erosion-in-quarries

[9] Ministry for the Environment (2016). Good Practice Guide for Assessing and Managing Dust. Wellington: Ministry for the Environment. Online at https://environment.govt.nz/assets/Publications/Files/good-practice-guide-dust-2016.pdf

[10] The Nature Conservancy (2015). Reducing Ecological Impacts of Shale Development: Ecological buffers. Online at: https://www.nature.org/media/centralapps/recommended-shale-practices-ecological-buffers.pdf

[11] Macfarlane & Bredin (2017). Buffer Zone Guidelines for Rivers, Wetlands and Estuaries. Part 1: Technical Manual. Online at: https://www.wrc.org.za/wp-content/uploads/mdocs/TT715-1_web.pdf

Mining pressures	Relevant Mining Infrastructure / Activities			Terrestrial Biodiversity AoI	Aquatic Biodiversity AoI	Notes / Justification
	Surface facilities	Underground mine	Underground tunnel			
mine/tunnel dewatering						hydrology of aquatic ecosystems, thereby indirectly affecting the condition and functioning of aquatic ecosystems such as wetlands and streams, as well as the species supported by these habitats. • Hydrological impacts and the effective range of impact of dewatering activities on surface water resources and watercourses is very site and context specific, and in underground mining projects this can have particularly far-reaching negative effects. The AoI specified at this stage for water/hydrology has been defined aas a 2 km radius buffer from the site underground infrastructure based on a preliminary assesment of the potential extent of groundwater drawdown. This informed the aquatic biodiversity AoI to cover impacts on the timing, pattern and volume of stream flows as a result of potential drawdown of the shallow aquifer. • Potential impacts ofaquifer drawdown on terrestrial ecosystems is probably unlikely, but unclear at this stage and will be revisited during the ESIA.

TABLE 3 EFFECTIVE INVESTIGATION AREA FOR FAUNAL BASELINE STUDIES FOR THE PROJECT

Faunal Group		Effective Investigation Area	Notes
Herpetofauna	Reptiles	50 m	Distance from above-ground project components
	Amphibians	500 m	
Birds	Breeding birds	500 m	
	Migratory and resting birds	500 m	
	Owls, small birds	500 m	
	Corncrake	500 m	
	Raptors/birds of prey, eagle owls	1000 m	
	Waterbirds (storks, cranes)	1000 m	
Mammals	Bats	200 m	Distance from edge of stockpile area at Liebenau
	Otter, polecat	200 m	Distance from above-ground project components
	Dormice, shrews	100 m	
Invertebrates	Butterflies	200 m	Distance from edge of stockpile area at Liebenau
	Moths	Direct footprint	Stockpile area at Liebenau
	Dragonflies	Nearby/downstream watercourses	Trebnitz and Seidewitz watercourses and flooded wet meadow areas and bogs east and south-east of the stockpile area
	Ground beetles	Vicinity of stockpile area at Liebenau	Trap locations should be near-natural forests, woodlands, wetlands and meadows in the vicinity of the stockpile area
	Macrozoobenthos (e.g. crabs, water snails, crayfish)	Nearby/downstream watercourses	Limited to areas with water crossings or interventions in water bodies

Source of information: Zinnwald Lithium Projekt: Leistungsbeschreibung für Biotoptypenkartierung und faunistische Untersuchungen" [English translation: *Zinnwald Lithium Project - Terms of Reference for biotope/habitat mapping and faunal investigations*], dated 02 October 2024

8.1.2 INFORMATION SOURCES FOR BIODIVERSITY BASELINE

Sources of information used to inform the baseline for biodiversity considered available global, regional (European) and national (Germany) as well as state/local level (Saxony) datasets, publicly available information, as well as the findings of biodiversity baseline surveys have already been conducted to date (for the period 2023 – 2024) to inform the German permitting process for the underground mine near Zinnwald and the exploration tunnel at the former border facility. These sources of information are summarized in Table 4.

Note that baseline surveys are ongoing for 2024 to cover the Liebenau processing plant and TSF site.

TABLE 4 SUMMARY OF INFORMATION SOURCES TO INFORM THE BASELINE FOR BIODIVERSITY

Information / database	Description	Source / Reference
International Union for Conservation of Nature (IUCN) Threatened Species Database (online)	Key source of information on global and regional (Europe) flora and fauna species distributions, conservation/threat status, ecology/biology and habitat requirements or preferences.	https://www.iucn.org (version 2024/2)
UNEP-WCMC / OneEarth (online)	Information on bioregions and ecoregions of the world.	https://www.oneearth.org/bioregions/
European Environment Agency: Natura 2000 Viewer and Datahub (online)	Source of information on the location, extent, designation and habitat/species conserved for Natura 2000 network of Protected Areas in Europe and Saxony (Germany). Includes links to downloadable copies of Natura 2000 data/information sheets for each site, including maps, supplementary information and site summaries, links to management plans, etc.	https://natura2000.eea.europa.eu https://www.natura2000.sachsen.de (published 23 April 2024, last modified 11 November 2024)
Natur im Osterzgebirge Informationen zur Natur im Osterzgebirge [English translation: 'Nature in the Eastern Ore Mountains'] (online)	An online database and resource with information on the individual Nature Reserves/Protected Areas in the Osterzgebirge (Eastern Ore Mountains) region of Saxony.	https://osterzgebirge.org/de/natur-erkunden/schutzgebiete/naturschutzgebiete/
Key Biodiversity Areas (KBA) database and web viewer (online)	Online information source showing the geographical location and extent of Key Biodiversity Areas (KBAs) with further information on what biodiversity values are responsible for their designation (trigger fauna/flora species).	https://www.keybiodiversityareas.org
BirdLife International Data Zone: knowledge hub for bird conservation (online)	Online information source and searchable database showing the geographical location and extent of Important Bird and Biodiversity Areas (IBAs) with further information on site description, conservation importance and what biodiversity values are responsible for IBA designation (trigger bird species and IBA justification).	https://datazone.birdlife.org
Ramsar (wetland) sites database and web viewer (online)	Online information source and searchable database showing the geographical location and extent of Ramsar sites of international importance (wetlands and supporting areas) designated under the Ramsar Convention on Wetlands (1971) as internationally important sites for conservation, with further information on what biodiversity values are responsible for their designation (trigger species/habitats). Includes links to downloadable copies of Ramsar Information Sheets (RISs) for each site, including maps, supplementary information and site summaries, links to management plans, etc.	https://rsis.ramsar.org
UNESCO World Heritage Sites Database (online)	Contains an online list and database with web viewer for World Heritage Sites designated per country, with information on their status, designation and site details. Of relevance to biodiversity are sites that are designated as 'natural' heritage sites or 'mixed' sites.	https://whc.unesco.org/en/list/
LUIS Sachsen	Spatial database showing the location of habitats protected according to German Law (national/district level: § 30 BNatSchG12 (legally protected biotopes in Germany) and § 21SachsNatSchg13 (legally protected biotopes in the District of Saxony).	https://www.luis.sachsen.de/fachbereich-natur.html
Species data from the Landratsamt Sächsische Schweiz – Osterzgebirge [English translation: 'District Office Saxon Switzerland-Eastern Ore Mountains']	Species data was obtained from the District office pertaining to the status of species of fauna and flora of conservation importance that are considered as being of high relevance on a local level, including threat status and listing as per the EU Habitats / Species Directives.	Obtained from Landratsamt Sächsische Schweiz – Osterzgebirge
Scoping assessment for habitat, flora and faunal assessments for Zinnwald completed in 2022	Scoping assessment report containing information on potential habitats (biotopes) and species of flora/fauna of conservation importance/protected species likely to occur in the Project area.	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung. [English translation: '*Zinnwald Lithium mine: Scoping Document'*]. Date: 04.11.2022
Specialist habitat mapping and flora assessment for Zinnwald and Bärenstein/Bielatal completed in 2023	Report on habitat Mapping, including legally protected habitats and EU Habits Directive Annex I habitats, including flora mapping, in 2022/2023 at Zinnwald and Bärenstein/Bielatal.	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung. [English translation: '*Zinnwald Lithium mine: Results of biotope type mapping/surveys'*]. Date: 21.11.2023
Specialist faunal species surveys for Zinnwald, Bärenstein/Bielatal and Altenberg completed in 2023	Report on species surveys in 2023 at Zinnwald, Bärenstein/Bielatal and Altenberg, focused on bats, birds, reptiles, amphibians and small mammals (e.g. Hazel dormouse).	Schulz UmweltPlanung (2023). Aufsuchung und Erschließung der Lithiumlagerstätte Zinnwald: Zwischenbericht zur faunistischen Kartierung der geplanten Betriebsanlagen in Zinnwald, Altenberg und Bärenstein

[12] § 30 BNatSchG: Gesetz über Naturschutz und Landschaftspflege (Bundesnaturschutzgesetz - BNatSchG) § 30 Gesetzlich geschützte Biotope [English translation: '*Act on Nature Conservation and Landscape Management (Federal Nature Conservation Act - BNatSchG) § 30 Legally protected biotopes'*]
[13] § 21 SächsNatSchG: Gesetz über Naturschutz und Landschaftspflege im Freistaat Sachsen (Sächsisches Naturschutzgesetz - SächsNatSchG) [English translation: '*Act on Nature Conservation and Landscape Conservation in the Free State of Saxony (Saxon Nature Conservation Act - SächsNatSchG)*']

Information / database	Description	Source / Reference
		[English translation: '*Exploration and development of the Zinnwald lithium deposit: Interim report on faunal mapping/surveys for the planned operating facilities in Zinnwald, Altenberg and Bärenstein'*]. Date: 21.06.2023
Species recordings and potential presence assessment for 2023	Document containing information on general habitats and potential species occurrence and recordings at the Zinnwald, Bärenstein/Bielatal and Altenberg study areas.	Schulz UmweltPlanung (2023). Dokumentation der Arterfassungen. [English translation: '*Documentation of species recordings'*]. Date: 20.10.2023
Specialist flora/fauna species surveys for Zinnwald (mine exploration tunnel site at the former border station completed in 2024	Report on flora and fauna species surveys at the exploration tunnel location at the former border station/facility ('Grenzstation') near Zinnwald in 2024 covering flora, mammals & bats, amphibians, reptiles and breeding birds.	Schulz UmweltPlanung (2024). Arterfassungen am Explorationsstollen Standort Alte Zollgrenzanlage: Dokumentation der Arterfassungen [English translation: '*Species surveys at the exploration tunnel location of the Old Customs Border Station/Facility: documentation of species recordings'*]. Date: 16.09.2024
Spatial compatibility assessment aligned with national requirements in Germany: Report on spatial planning study and preliminary environmental assessment	Spatial planning impacts on protected assets are dealt with in the preliminary environmental assessment. The spatial planning specifications and their intended purpose are recorded and the conflicts resulting from the possible project-related impacts are identified, described and assessed. Biodiversity (biological environment) is included in this initial assessment.	GICON, 2025a. Unterlagen zur Raumverträglichkeitsprüfung. Unterlage C: Raumordnungsuntersuchung und überschlägige Umweltprüfung. [English translation: '*Documents for spatial compatibility assessment - Spatial planning study and preliminary environmental assessment'*] Date: 22.01.2025
Spatial compatibility assessment aligned with national requirements in Germany: Report on Natura 2000 (protected areas) significance assessment	To examine the spatial compatibility of the Project, an initial assessment is required to determine if the Project can meet the requirements of the Federal Nature Conservation Act (Section 34 BNatSchG) and the Nature Conservation Act of the Free State of Saxony (Section 23 SächsNatSchG) due to unavoidable impacts to Natura 2000 sites that cannot be easily mitigated.	GICON, 2025b. Unterlagen zur Raumverträglichkeitsprüfung. Unterlage D1: Natura 2000-Erheblichkeitseinschätzung. [English translation: '*Documents for spatial compatibility assessment - Natura 2000 significance assessment'*]. Date: 24.01.2025
Spatial compatibility assessment aligned with national requirements in Germany: Report on the initial assessment of species protected under German law	To assess the spatial compatibility of the Project and alternatives, an initial assessment under species protection law is required to determine whether the implementation of the planned project is potentially precluded from the outset by unavoidable species protection concerns that cannot be easily managed or mitigated.	GICON, 2025c. Unterlagen zur Raumverträglichkeitsprüfung. D2: Artenschutzrechtliche Ersteinschätzung zur Raumverträglichkeitsprüfung. [English translation: '*Documents for spatial compatibility assessment - Initial assessment under species protection law for the spatial compatibility assessment'*]. Date: 27.01.2025

8.1.3 INFORMATION ON PROTECTED AREAS

For the 12 Protected Areas identified in the Project biodiversity AoI, a summary of the protected areas information and relationship to the Project ('Project Association') is presented in Table 5.

Individual habitat types described as per the classification in the EU Habitats Directive are listed in Table 6, which indicates which of the relevant Natura 2000 sites (SACs) contain these habitats. Table 7 summarises each of the faunal species conserved within the relevant Natura 2000 sites together with their status (i.e. resident, breeding, congregatory, migrant, wintering).

TABLE 5 SUMMARY DETAILS ON PROTECTED AREAS WITHIN THE PROJECT AOI FOR BIODIVERSITY

No.	Protected Area (PA) Name	Type			Extent	Country	Biodiversity Conserved and/or Qualifying Features for Designation as Natura 2000	Distance of PA from Project Infrastructure / Facility (m)	Project Association				Notes
		SAC / FFH	SPA	NSG					Underground Mine	Surface Facilities at Border Station	Underground Tunnel	Liebenau processing plant + tailings storage	
1	Georgenfelder Hochmoor	■		■	35 ha	GE	Habitats	768	✓	✓			• Management plan available • Contains NSG of same name
2	Kahleberg und Lugsteingebiet		■		328 ha	GE	Birds	435	✓	✓			• No management plan
3	Bergwiesen um Schellerhau und Altenberg	■		■	82 ha	GE	Habitats	774	✓	✓	✓		• Management plan available • Contains NSG: 'Schwarzwasserwiese bei Altenberg'
4	Geisingberg und Geisingwiesen		■	■	347 ha	GE	Birds	1,020			✓		• PA overlaps with KBA/IBA • Management plan available • Contains NSG: 'Geisingberg'
5	Müglitztal	■			1,657 ha	GE	Habitats Bats, mammals, fish, amphibians, invertebrates	322			✓		• Management plan available
6	Osterzgebirgstäler		■		4,894 ha	GE	Birds	783			✓		• No management plan
7	Feuchtgebiet bei Waltersdorf*			■	4.5 ha	GE	Wetlands, amphibians, reptiles, dragonflies, plants, Storks	912				✓	• NSG only (not part of Natura 2000)
8	Trebnitztal	■			248 ha	GE	Habitats	779				✓	• Management plan available
9	Mittelgebirgslandschaft um Oelsen	■			680 ha	GE	Habitats Bats, mammals, fish, invertebrates	755			✓	✓	• Management plan available
10	Fürstenau		■		4, 894 ha	GE	Birds	Adjacent, underneath (below ground in the case of the underground tunnel)			✓	✓	• PA overlaps with KBA/IBA • No management plan
11	Fürstenauer Heide und Grenzwiesen Fürstenau	■		■	522 ha	GE	Habitats, mammal	84			✓		• Management plan available • Contains NSG: 'Grenzwiesen Fürstenau und Fürstenwalde'
12	Východní Krušné hory		■		16,367.7 ha	CZ	Birds	Adjacent	✓	✓	✓		• Located in Czech Republic • PA overlaps with KBA/IBA/Ramsar site • Management plan available • A section is designated as an SCI

Notes:

- SAC = Special Areas for Conservation (designated under the EU Habitats Directive)
- SPA = Special Protection Area (designated under the EU Birds Directive)
- SCI = Site of Community Importance
- FFH = 'Fauna-Flora-Habitat-Gebiet' (area of protection for fauna, flora, habitat in Germany)
- NSG = 'Naturschutzgebiet' (Nature Conservation Area protected nationally under German Law)
- KBA = Key Biodiversity Area
- IBA = Important Bird and Biodiversity Area
- Country codes - GE = Germany, CZ = Czech Republic

*Only one site (Feuchtgebiet bei Waltersdorf) is protected in Germany as a NSG (Naturschutzgebiet) but does not form part of the regional Natura 2000 network.

TABLE 6 NATURAL HABITAT TYPES LISTED IN THE EU HABITATS DIRECTIVE THAT ARE CONSERVED WITHIN THE RELEVANT NATURA 2000 SITES.

Code	Habitat Type	EU Priority habitat type?	Georgenfelder Hochmoor	Kahleberg und Lugsteingebiet	Bergwiesen um Schellerhau und Altenberg	Geisingberg und Geisingwiesen	Müglitztal	Osterzgebirgstäler	Trebnitztal	Mittelgebirgslandschaft um Oelsen	Fürstenau	Fürstenauer Heide und Grenzwiesen Fürstenau	Východní Krušné hory
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation				Yes								
3160	Natural dystrophic lakes and ponds		Yes		Yes								
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation						Yes		Yes	Yes		Yes	
4030	European dry heaths				Yes				Yes				
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)						Yes						
6230*	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Yes	Yes		Yes		Yes			Yes		Yes	
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)				Yes					Yes			
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels						Yes		Yes	Yes		Yes	
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)						Yes		Yes	Yes			
6520	Mountain hay meadows		Yes		Yes		Yes		Yes	Yes		Yes	
7110*	Active raised bogs	Yes	Yes										
7120	Degraded raised bogs still capable of natural regeneration		Yes										
7140	Transition mires and quaking bogs		Yes		Yes		Yes					Yes	
7220*	Petrifying springs with tufa formation (Cratoneurion)	Yes					Yes						
7230	Alkaline fens						Yes			Yes			
8150	Medio-European upland siliceous screes						Yes		Yes				
8160*	Medio-European calcareous scree of hill and montane levels	Yes					Yes						
8210	Calcareous rocky slopes with chasmophytic vegetation						Yes						
8220	Siliceous rocky slopes with chasmophytic vegetation						Yes		Yes	Yes			
8310	Caves not open to the public						Yes						
9110	Luzulo-Fagetum beech forests						Yes		Yes	Yes			
9130	Asperulo-Fagetum beech forests						Yes		Yes				
9170	Galio-Carpinetum oak-hornbeam forests						Yes		Yes				
9180*	Tilio-Acerion forests of slopes, screes and ravines	Yes					Yes		Yes	Yes			
91D0*	Bog woodland	Yes	Yes									Yes	
91E0*	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	Yes					Yes		Yes	Yes			
9410	Acidophilous Picea forests of the montane to alpine levels (Vaccinio-Piceetea)		Yes		Yes							Yes	

*Note that several habitats are identified in Annex I of the EU Habitats Directive as being ‘priority natural habitats’, which represent natural habitat types in danger of disappearance in the European Union territories and for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the EU territory.

TABLE 7 LIST OF IMPORTANT FAUNAL SPECIES CONSERVED AT RELEVANT NATURA 2000 SITES

Group	Species Latin Name	Common Name	IUCN Threat Status: Global	IUCN Threat Status: Europe	Annex I EU Birds Directive	Annex II/III EU Birds Directive	Revised Annex I of Resolution 6 BERN	Annex II Bern	Georgenfelder Hochmoor	Kahleberg und Lugsteingebiet	Bergwiesen um Schellerhau und Altenberg	Geisingberg und Geisingwiesen	Müglitztal	Osterzgebirgstäler	Trebnitztal	Mittelgebirgslandschaft um Oelsen	Fürstenau	Fürstenauer Heide und Grenzwiesen Fürstenau	Východní Krušné hory
Amphibians	*Triturus cristatus*	Great Crested Newt	LC	LC			Yes	Yes					R						
Bats	*Barbastella barbastellus*	Barbastelle Bat	NT	VU			Yes								C	C			
Bats	*Myotis myotis*	Greater Mouse-eared bat	LC	LC			Yes						C		C	C			
Bats	*Rhinolophus hipposideros*	Lesser horseshoe bat	LC	LC			Yes						C						
Birds	*Alcedo atthis*	Common Kingfisher	LC	LC	Yes		Yes	Yes						B			B		
Birds	*Anas crecca*	Common Teal	LC	LC		Yes								C			C		
Birds	*Anas platyrhynchos*	Mallard	LC	LC		Yes				C		C					C		
Birds	*Ardea cinerea*	Grey Heron	LC	LC								C		C			C		
Birds	*Bubo bubo*	Eurasian Eagle-owl	LC	LC	Yes		Yes							B			B		
Birds	*Ciconia nigra*	Black Stork	LC	LC	Yes		Yes					C		C			C		
Birds	*Crex crex*	Corncrake	LC	LC	Yes		Yes	Yes		B+C		B+C		B+C			B+C		
Birds	*Dryocopus martius*	Black Woodpecker	LC	LC	Yes		Yes					B					B		
Birds	*Falco subbuteo*	Eurasian Hobby	LC	LC										B			B		
Birds	*Ficedula parva*	Red-breasted Flycatcher	LC	LC	Yes		Yes							B			B		
Birds	*Gallinago gallinago*	Common Snipe	LC	VU		Yes				B		B							
Birds	*Glaucidium passerinum*	Eurasian Pygmy-owl	LC	LC	Yes		Yes					B		B			B		
Birds	*Jynx torquilla*	Eurasian Wryneck	LC	LC						B				B			B		
Birds	*Lanius collurio*	Red-backed Shrike	LC	LC	Yes		Yes			B		B		B			B		
Birds	*Lanius excubitor*	Great Grey Shrike	LC	LC						B									
Birds	*Milvus migrans*	Black Kite	LC	LC	Yes		Yes							B			B		
Birds	*Milvus milvus*	Red Kite	LC	LC	Yes		Yes							B			B		
Birds	*Pernis apivorus*	European Honey-buzzard	LC	LC	Yes		Yes					B		B			B		
Birds	*Philomachus pugnax*	Ruff	LC	NT	Yes		Yes							C			C		
Birds	*Picus canus*	Grey-faced Woodpecker	LC	LC	Yes		Yes					B		B			B		
Birds	*Saxicola rubetra*	Whinchat	LC	LC		Yes				B		B					B		
Birds	*Sylvia nisoria*	Barred Warbler	LC	LC	Yes		Yes							B			B		

Group	Species Latin Name	Common Name	IUCN Threat Status: Global	IUCN Threat Status: Europe	Annex I EU Birds Directive	Annex II/III EU Birds Directive	Revised Annex I of Resolution 6 BERN	Annex II Bern	Georgenfelder Hochmoor	Kahleberg und Lugsteingebiet	Bergwiesen um Schellerhau und Altenberg	Geisingberg und Geisingwiesen	Müglitztal	Osterzgebirgstäler	Trebnitztal	Mittelgebirgslandschaft um Oelsen	Fürstenau	Fürstenauer Heide und Grenzwiesen Fürstenau	Východní Krušné hory
Birds	*Tetrao tetrix*	Black Grouse	LC	LC	Yes		Yes			B				B			B		R
Birds	*Turdus torquatus*	Ring Ouzel	LC	LC				Yes		B									
Birds	*Vanellus vanellus*	Northern Lapwing	NT	VU		Yes								B+C			B+C		
Fish	*Cottus gobio*	European Bullhead	LC	LC			Yes						R		R	R			
Invertebrates	*Callimorpha quadripunctaria*		LC	LC			Yes						R		R				
Invertebrates	*Carabus menetriesi pacholei*		LC	LC			Yes						R						
Invertebrates	*Phengatis (Maculinea) nausithous*	Dusky Large Blue	NT	NT			Yes	Yes								R			
Mammals	*Lutra lutra*	Eurasian otter	NT	NT			Yes	Yes					C			C			
Mammals	*Lynx lynx*	Lynx	LC	LC			Yes								C	C		C	

Table key:

IUCN threat status: VU = Vulnerable, NT = Near Threatened, LC = Least Concern

Species presence and status: = Breeding, C = Concentration, R = Resident

8.1.4 INFORMATION ON OTHER INTERNATIONALLY RECOGNISED AREAS OF BIODIVERSITY VALUE

In addition to legally protected areas (PAs), EBRD ESR6 also recognizes other 'internationally recognised areas' of biodiversity value, which is typically where the international standards differ from the National legislation in Germany and European directives.

Table 8 provides a summary of information pertaining to each of the four internationally recognised areas relevant to the Project.

TABLE 8 OTHER INTERNATIONALLY RECOGNISED AREAS RELEVANT TO THE PROJECT

M	Site Name	Type	Country	Description	Biodiversity values conserved	Protected Area overlap
1	**Osterzgebirge um Fürstenau** (Eastern Erzgebirge around Fürstenau)	Key Biodiversiy Area (KBA) + Important Bird and Biodiversity Areas (IBA)	Germany	Legacy site. This site qualifies as a Key Biodiversity Area of international significance that was identified using previously established criteria and thresholds for the identification of Important Bird and Biodiversity Areas (IBAs) and for which available data indicate that it does not meet global KBA criteria and thresholds set out in the Global Standard IBA Criterion C6 met in 2002: Species threatened at the European Union level: The site is one of the five most important in the European region (NUTS region) in question for a species or subspecies considered threatened in the European Union (i.e. listed in Annex I of the EU Birds Directive). Species of global conservation concern that do not meet IBA criteria: *Crex crex* (breeding).	Several bird species: • Corncrake, *Crex crex* (R – resident), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Eurasian Eagle-owl, *Bubo bubo* (R), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Eurasian Pygmy-owl, *Glaucidium passerinum* (R), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Red-backed Shrike, *Lanius collurio* (R), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Black Grouse, *Tetrao tetrix* (R), LC globally, Annex I EU Birds Directive • Black Stork, *Ciconia nigra* (B – breeding), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Boreal Owl, *Aegolius funereus* (R), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6 • Grey-faced Woodpecker, *Picus canus* (R), LC globally, Annex I EU Birds Directive, Revised Annex I of Resolution 6	98.31%
2	**Geisingberg and Geisingwiesen**	KBA + IBA	Germany	Legacy site. Site qualifies as a Key Biodiversity Area of international significance that was identified using previously established criteria and thresholds for the identification of Important Bird and Biodiversity Areas (IBAs) and for which available data indicate that it does not meet global KBA criteria and thresholds set out in the Global Standard. IBA Criterion C6 met in 2002: Species threatened at the European Union level: The site is one of the five most important in the European region (NUTS region) in question for a species or subspecies considered threatened in the European Union (i.e. listed in Annex I of the EU Birds Directive).	Not documented on KBA information page. Refer to species and habitats for the associated protected area (Natura 2000).	98.26%
3	**Vychodni Krusne hory** (Eastern Krušné hory mountains)	KBA + IBA	Czech Republic	Legacy site. Qualifies as a Key Biodiversity Area of international significance that was identified using previously established criteria and thresholds for the identification of Important Bird and Biodiversity Areas (IBAs) and for which available data indicate that it does not meet global KBA criteria and thresholds set out in the Global Standard. This is an extensive area covering the upperparts of the Krusné hory mountains, which were so badly damaged by air pollution in the past that much of the spruce forests had perished. Nowadays, the area comprises patches of peat bogs mixed with bare areas planted with substitute woods and former fields, meadows and frost holes that cannot be planted. Flajska prehrada dam was created as a source of drinking water and is also part of the KBA/IBA. There are still largely uninhabited areas and human settlements are dispersed irregularly. The environment hosts distinct bird communities, in particular Black Grouse - *Tetrao tetrix*.	Tetrao tetrix (Black Grouse), LC globally, Annex I EU Birds Directive	97.86%
4	**Krusnohorská raseliniste** (Krusnohorska mountains mires)	Ramsar (wetland) site	Czech Republic	A complex of eight sub sites located in the Krusnohorska mountains of Czechia near the border with Germany, with the sites located nearest to the Project being Cinovec a, b, c). The Ramsar site comprises a system of approx. 30 representative patterned mires and raised bogs (alkaline fens) with scattered patches of trees, with neighbouring natural and artificial watercourses, fishponds and reservoir shores in the northwest of the country near the border with Germany. The extensive Petlands are characteristic of the Central European middle-mountains and were historically mined for peat. Presently the Ramsar site is mainly used for game keeping, hunting and forestry. In a few remaining localities, peat mining in wetlands is being brought to an end and remains a critical conservation issue. The site also provides various facilities for tourism, including marked hiking and biking trails and cross-country skiing routes.	Comprises large mosaics of unique lag areas represented by highly alkaline fens with scattered tree patches, with several habitat types listed in the EU Habitats Directive, including (some of which are EU priority habitat types): • transitional mires • open raised bogs • raised bogs with *Pinus mugo* • bog hollows • degraded raised bogs	Overlap with SCI and SPA, however an accurate boundary of the site and extent of overlap is not available currently.

M	Site Name	Type	Country	Description	Biodiversity values conserved	Protected Area overlap
				0isdThe large-scale overall protection of the area is presently lacking.	• bog spruce forests Remarkable lag areas are supplied by seepage of minerotrophic groundwater, which has resulted in nutrient-rich/alkaline fens of unique biodiversity value. Support several threatened (CR, EN, VU) species of plants and vertebrates. Supporting high numbers of endangered plant species, such as *Hamatocaulis vernicosus, Carex chordorrhiza* and *Drosera anglica*. Central European endemic tree species: *Pinus rotundata* Providing preferred habitat for several conservation-important grouse birds including Black Grouse (*Tetrao tetrix),* Western Capercaillie *(Tetrao urogallus),* and Hazel Grouse (*Tetrastes bonasia).*	

Information sources:

Osterzgebirge um Fürstenau KBA/IBA

- https://www.keybiodiversityareas.org/site/factsheet/3434
- https://datazone.birdlife.org/site/factsheet/3434

Geisingberg and Geisingwiesen KBA/IBA

- https://www.keybiodiversityareas.org/site/factsheet/9286
- https://datazone.birdlife.org/site/factsheet/9286

Východní Krušné hory KBA

- https://www.keybiodiversityareas.org/site/factsheet/18748

Krusnohorská raseliniste Ramsar wetland site

- https://rsis.ramsar.org/ris/1670
- https://rsis.ramsar.org/RISapp/files/RISrep/CZ1670RIS.pdf

8.1.5 INFORMATION ON NATIONAL/STATE LEVEL SPECIES OF CONSERVATION IMPORTANCE

Species data was obtained for the Project's biodiversity AoI from the nature protection authority for the Federal State of Saxony (Landratsamt Sächsische Schweiz – Osterzgebirge: translated to English as 'District Office Saxon Switzerland-Eastern Ore Mountains'). This includes species data pertaining to the status of species of conservation importance that are considered as being of high relevance at a local level, which is summarised in Table 9.

TABLE 9 SPECIES OF NATIONAL/STATE LEVEL CONSERVATION CONCERN IN TERMS OF THE EU HABITATS DIRECTIVE, EU BIRDS DIRECTIVE AND LOCAL RED LIST STATUS FOR FEDERAL STATE OF SAXONY

Scientific name	**Common Name**	**Habitats Directive** (Annex II/IV/V)	**Annex I EU Birds Directive**	**Red List Status for Saxony**	**Threat Status IUCN** (Global / Europe)	**Habitat** (IUCN)	**Confirmed during baseline surveys?** (see section 5.3)
MAMMALS							
1 Eptesicus nilssonii	Northern Bat	FFH-IV		2 (EN)	LC/LC	Generalist (various)	Confirmed: underground mine site + exploration tunnel
2 Lutra lutra	Eurasian Otter	FFH-II, FFH-IV		3 (VU)	NT/NT	Aquatic (rivers, streams, lakes, wetlands)	Possible: Liebenau plant
3 Nyctalus noctula	Common Noctule	FFH-IV		V (NT)	LC/LC	Generalist (various)	Confirmed: underground mine site
4 Pipistrellus nathusii	Nathusius' Pipistrelle	FFH-IV		3 (VU)	LC/LC	Generalist (various)	Possible: Liebenau plant
5 Pipistrellus pipistrellus	Common Pipistrelle	FFH-IV		V (NT)	LC/LC	Generalist (various)	Confirmed: underground mine site + exploration tunnel
6 Canis lupus	Grey wolf	FFH-II, FFH-IV		2 (EN)	LC/LC	Generalist (various)	Possible: Liebenau plant
REPTILES							
Vipera berus	Adder			2 (EN)	LC/LC	Generalist (various)	Suspected: underground mine site + exploration tunnel
FISH							
Cottus gobio	European Bullhead	FFH-II		U (DD)	LC/LC	Aquatic (rivers, streams, lakes)	Possible: Liebenau plant
BIRDS							
1 Accipiter nisus	Eurasian Sparrowhawk		Yes	* (LC)	LC/LC	Forest mainly	
2 Alcedo atthis	Common Kingfisher		Yes	3 (VU)	LC/LC	Aquatic: wetlands, streams, rivers, canals, lakes, ponds	
3 Anthus pratensis	Meadow Pipit			2 (EN)	LC/LC	Generalist (various)	
4 Bubo bubo	Eurasian Eagle-Owl		Yes	V (NT)	LC/LC	Forest, woodland	
5 Buteo buteo	Eurasian (Common) Buzzard			* (LC)	LC/LC	Generalist (various)	Confirmed: underground mine site
6 Ciconia nigra	Black Stork		Yes	V (NT)	LC/LC	Forests, wetlands	Possible: Liebenau plant
7 Circus aeruginosus	Western Marsh-harrier		Yes	* (LC)	LC/LC	Wetlands (dense marsh)	
8 Coturnix coturnix	Common Quail		Yes	* (LC)	LC/NT	Open habitats, agricultural land	Possible: Liebenau plant
9 Crex crex	Corn Crake		Yes	2 (EN)	LC/LC	Grassland, agriculture/meadows	Confirmed: exploration tunnel Possible: Liebenau plant
10 Dryocopus martius	Black Woodpecker		Yes	* (LC)	LC/LC	Forest	Confirmed: underground mine site
11 Emberiza calandra	Corn Bunting			V (NT)	LC/LC	Grasslands, agricultural land	
12 Erithacus rubecula	European Robin			* (LC)	LC/LC	Forest, woodland	
13 Fringilla coelebs	Common Chaffinch		Yes	* (LC)	LC/LC	Generalist (various)	Confirmed: exploration tunnel
14 Gallinago gallinago	Common Snipe			1 (CR)	LC/VU	Wetlands, grassland	Possible: Liebenau plant
15 Grus grus	Common Crane		Yes	* (LC)	LC/LC	Wetlands, pasture	Possible: Liebenau plant
16 Lanius collurio	Red-backed Shrike		Yes	* (LC)	LC/LC	Generalist (various)	Confirmed: exploration tunnel
17 Lanius excubitor	Great Grey Shrike			2 (EN)	LC/LC	Generalist (various)	
18 Locustella fluviatilis	River Warbler			* (LC)	LC/LC	Wetlands, grassland, woodland	
19 Milvus milvus	Red Kite		Yes	* (LC)	LC/LC	Woodlands, forest, pasture	Possible: Liebenau plant
20 Oriolus oriolus	Eurasian Golden Oriole			V (NT)	LC/LC	Generalist (various)	
21 Parus major	Great Tit			* (LC)	LC/LC	Forest	
22 Pernis apivorus	European Honey-buzzard		Yes	V (NT)	LC/LC	Forest, woodland	

Scientific name	**Common Name**	**Habitats Directive** (Annex II/IV/V)	**Annex I EU Birds Directive**	**Red List Status for Saxony**	**Threat Status IUCN** (Global / Europe)	**Habitat** (IUCN)	**Confirmed during baseline surveys?** (see section 5.3)
23 Phoenicurus phoenicurus	Common Redstart			3 (VU)	LC/LC	Generalist (various)	
24 Saxicola rubetra	Whinchat			2 (EN)	LC/LC	Wetlands, grassland	
25 Sylvia atricapilla	Eurasian Blackcap			* (LC)	LC/LC	Forest, woodland	Confirmed: exploration tunnel
26 Sylvia communis	Common Whitethroat			V (NT)	LC/LC	Generalist (various)	
27 Troglodytes troglodytes	Northern Wren		Yes	* (LC)	LC/LC	Generalist (various)	
28 Turdus merula	Eurasian (Common) Blackbird			* (LC)	LC/LC	Generalist (various)	Confirmed: exploration tunnel
29 Turdus pilaris	Fieldfare			* (LC)	LC/LC	Generalist (various)	
30 Turdus philomelos	Song Thrush			* (LC)	LC/LC	Forest, woodland	
31 Vanellus vanellus	Northern Lapwing			1 (CR)	NT/VU	Wet grasslands, pastures	
INVERTEBRATES							
1 Agapanthia intermedia	-			D (DD)	Not assessed	-	
2 Apatura iris	Purple Emperor			2 (EN)	LC/-	Woodlands	
3 Cordulegaster boltonii	Common Goldenring			3 (VU)	LC/LC	Forest, streams/rivers	
4 Cyaniris semiargus	Mazarine Blue			2 (EN)	-/LC	Grasslands, pastures	
5 Euplagia quadripunctaria	Jersey Tiger Moth	FFH-II		2 (EN)	Not assessed	-	
6 Lycaena hippothoe	Purple-edged Copper			2 (EN)	-/LC	Grasslands, wetlands	
7 Lycaena virgaureae	Scarce Copper			3 (VU)	-/LC	Grasslands	
8 Megachile nigriventris	Mégachile à ventre noir			2 (EN)	-/DD	Forest	
9 Speyeria aglaja	Dark Green Fritillary			3 (VU)	LC/LC	Grasslands	
PLANTS							
1 Arnica montana	Mountain Arnica	FFH-V		2 (EN)	LC/LC	Grassland, shrubland, forest	
2 Dactylorhiza fuchsii	Common Spotted Orchid			2 (EN)	-/LC	Woodlands, grasslands, marshes, meadows	
3 Dactylorhiza majalis	Broad-leaved Marsh Orchid			3 (VU)	-/LC	Marshland, wet meadows, damp grassland	
4 Dianthus sylvaticus	Woodland Pink			1 (CR)	Not assessed	-	
5 Drosera rotundifolia	Common Sundew			2 (EN)	LC/LC	Wetlands, rivers, lakes	
6 Lilium bulbiferum	Orange Lily			1 (CR)	Not assessed	-	
7 Pedicularis sylvatica	Lousewort			2 (EN)	Not assessed	-	
8 Scorzonera humilis	Low Scorzonera			1 (CR)	Not assessed	-	
9 Trollius europaeus	Globeflower			1 (CR)	Not assessed	-	
LICHENS							
Bryoria fuscescens	Brown Beard Lichen			0 (EX)	Not assessed	-	

Table key: IUCN threat status: CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern

8.1.6 FAUNAL SPECIES IDENTIFIED DURING BASELINE SURVEYS

Specialist baseline flora and fauna surveys have already been carried out for components of the Project in 2023 and 2024, notably the underground mine near Zinnwald (Schulz UmweltPlanung, 2023 as well as the exploration tunnel site for the Zinnwald mine located at the former border station/facility (Schulz UmweltPlanung, 2024). Table 10 provides a summary list of faunal species observed.

Note that surveys have not covered the processing plant/tailings facility at Liebenau, however surveys covering these components of the Project are planned for 2025.

TABLE 10 SPECIES IDENTIFIED DURING BASELINE FLORA AND FAUNA SPECIES SURVEYS UNDERTAKEN IN 2023 AND 2024 BY SCHULZ UMWELTPLANUNG

Group	Species Latin Name	Common Name (IUCN)	IUCN Threat Status: Global	IUCN Threat Status: Europe	Red Data List Status: Saxony	Protection Status (Germany/Saxony)	Annex I EU Birds Directive	EU Habitats Directive	Revised Annex I of Resolution 6 BERN	Annex II Bern	Underground Mine near Zinnwald	Exploration tunnel (former border station)
Amphibians	*Rana temporaria*	European Common Frog	LC	LC	LC	Not protected		Annex V			C	
Bats	*Eptesicus nilssonii*	Northern Bat	LC	LC	EN	Specially protected		Annex IV			C	C
Bats	*Myotis daubentonii*	Daubenton's Bat	LC	LC	LC	Specially protected		Annex IV			C	
Bats	*Myotis myotis**	Greater Mouse-eared Bat	LC	LC	VU	Specially protected		Annex IV	Yes		C	
Bats	*Myotis mystacinus/ brandtii*	Steppe Whiskered Bat / Brand't Bat	LC	LC	EN	Specially protected		Annex IV			C	
Bats	*Nyctalus noctula*	Common Noctule	LC	LC	NT	Specially protected		Annex IV			C	
Bats	*Pipistrellus pipistrellus*	Common Pipistrelle	LC	LC	NT	Specially protected		Annex IV			C	C
Bats	*Plecotus auritus*	Brown Long-eared Bat	NT	NT	NT	Specially protected		Annex IV				C
Bats	*Plecotus austriacus*	Grey Long-eared Bat	NT	NT	EN	Specially protected		Annex IV				C
Birds	*Alauda arvensis*	Eurasian Skylark	LC	LC	NT	Protected						C
Birds	*Buteo buteo*	Eurasian (Common) Buzzard	LC	LC	LC	Protected					C	
Birds	*Carduelis cannabina*	Common Linnet	LC	LC	NT	Protected				Yes		C
Birds	*Carduelis carduelis*	European Goldfinch	LC	LC	LC	Protected				Yes		C
Birds	*Crex crex**	Corn Crake	LC	LC	EN	Protected	Yes		Yes	Yes		C
Birds	*Dryocopus martius**	Black Woodpecker	LC	LC	LC	Protected	Yes		Yes		C	
Birds	*Emberiza citrinella*	Yellowhammer	LC	LC	LC	Protected				Yes		C
Birds	*Falco tinnunculus*	Common Kestrel	LC	LC	LC	Protected						
Birds	*Fringilla coelebs*	Common Chaffinch	LC	LC	LC	Protected	Yes					C
Birds	*Lanius collurio**	Red-backed Shrike	LC	LC	LC	Protected	Yes		Yes			C
Birds	*Motacilla alba*	White Wagtail	LC	LC	LC	Protected						C
Birds	*Phoenicurus ochruros*	Black Redstart	LC	LC	LC	Protected				Yes		C
Birds	*Phylloscopus collybita*	Common Chiffchaff	LC	LC	LC	Protected						C
Birds	*Phylloscopus trochilus*	Willow Warbler	LC	LC	NT	Protected						C
Birds	*Sylvia atricapilla*	Eurasian Blackcap	LC	LC	LC	Protected						C
Birds	*Sylvia borin*	Garden Warbler	LC	LC	NT	Protected						C
Birds	*Turdus merula*	Eurasian (Common) Blackbird	LC	LC	LC	Protected						C
Mammals	*Muscardinus avellanarius*	Hazel dormouse	LC	LC	LC	Specially protected		Annex IV			S	
Reptiles	*Natrix natrix*	Grass Snake	LC	LC	NT	Not protected					S	
Reptiles	*Vipera berus*	Adder	LC	LC	EN	Not protected					S	

Table key:
IUCN threat status: CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern
C = species confirmed through surveys, S = species not confirmed but suspected to occur
*=asterix denotes species that are conserved and responsible (at least partly) for the designation of associated Natura 2000 sites in the Project AoI
RDL status for Saxony designated in terms of the Red List and Species List of Saxony – Ferns and Seed Plants (2013) (source: https://publikationen.sachsen.de/bdb/artikel/19031 and for fauna using the Red List of Vertebrates in Saxony (2015) (source: https://www.natur.sachsen.de/RL_WirbeltiereSN_Tab_20160407_final.pdf)
Species protection status: 'Specially protected' = Streng geschützt (Sg) (Annex IV of the EU Habitats Direcrive, Annex A of Directive 338/97), 'Protected' = Besonders geschützt (Bg) (EU bird species, Annex IV HD species, Species of Annex A and Annex B of Directive338/97), in terms of §7 BNatSchG

8.1.7 CRITICAL HABITAT SCREENING

8.1.7.1 INTRODUCTION AND OVERVIEW

'Critical Habitat' (CH) is a subset of natural and modified habitats (i.e. both natural and modified habitats can potentially qualify as CH), and the definition thereof is contained in the standards of various International Financial Institutions (IFIs), including EBRD. CH is defined in paragraph 14 of EBRD ESR6 as follows:

> *Para. 14: "The most sensitive biodiversity features are defined as critical habitat, comprise one of the following: (i) highly threatened or unique ecosystems; (ii) habitats of significant importance to endangered or critically endangered species; (iii) habitats of significant importance to endemic or geographically restricted species; (iv) habitats supporting globally significant migratory or congregatory species; or (v) areas associated with key evolutionary processes."* - EBRD ESR6 (2024).

It is important to note here to acknowledge that CH can apply to both natural and modified habitats.

NOTE: Importantly, in terms of the national legislation governing biodiversity and habitats in Germany, the term 'Critical Habitat' is not used explicitly in terms of the EBRD definition, neither are the criteria and thresholds of EBRD applied in EIAs or biodiversity assessments towards meeting national permitting requirements.

The CH term, criteria and thresholds are therefore exclusively used by the International Finance Institutions (IFIs) including EBRD and would only strictly come into effect when assessments are carried out to align with the performance requirements/standards of IFIs such as EBRD ESR6. EHSIAs designed to meet the EBRD ESR6 therefore would need to consider the relevant critical habitat definition and assessment requirements.

EBRDs approach to Critical Habitat Assessment (CHA) is systematic and typically requires an understanding of the species and habitats present within an EAAA (Ecologically Appropriate Area of Analysis). As a first step, Protected Areas and Internationally Important Areas (of high biodiversity value) are typically considered as CH, however it is important to note that the assessment does not necessarily restrict itself to these areas.
The CH criteria of EBRD are essentially 'triggers', in that if an area of habitat meets any one of the qualifying criteria and is within the defined thresholds (see Table 11), it will be considered CH irrespective of failing to meet any other criterion. The CH criteria therefore have two distinctive characteristics:

- firstly, components of biodiversity are essentially assigned to only two levels of conservation significance, those that trigger CH and those that do not; and
- secondly, each criterion is applied separately and not in combination, meaning that the scores are not cumulative, such that a species may be screened in more than one criterion [e.g. a Critically Endangered species that is also endemic or restricted in terms of range].

Important to note also is that EBRD also has criteria and thresholds for determining PBF (Priority Biodiversity Features[14]) in addition to CH (see Table 11).

[14] Priority Biodiversity Features (PBF): This concept replaces the previous definition of natural habitat used previously by EBRD and adopts a criterion-based approach already used for definition of critical habitat. Priority in all EBRD definitions combines consideration of irreplaceability and vulnerability. Priority biodiversity features (PBF) have a high, but not the highest, degree of irreplaceability and/or vulnerability. Although a level below critical habitat in sensitivity, they still require careful consideration during project assessment and impact mitigation (EBRD PR6, 2019).

TABLE 11 CRITERIA AND THRESHOLDS FOR DETERMINING CRITICAL HABITAT ACCORDING TO EBRD

Criteria	Priority Biodiversity Feature	Critical Habitat
1. Priority ecosystems		
Threatened ecosystems		
(a) Habitats listed in Annex 1 of EU Habitats Directive (EU member states only) or Resolution 4 of Bern Convention (signatory nations only) (b) IUCN Red-List EN or CR ecosystems	(a) Ecologically appropriate area of analysis (EAAA) is habitat type listed in Annex 1 of EU Habitats Directive (EU member states only) or Resolution 4 of Bern Convention (b) EAAA < 5% of the global extent of an ecosystem type with IUCN status of CR or EN	(a) EAAA is habitat type listed in Annex 1 of EU Habitats Directive marked as "priority habitat type" (b) EAAA ≥ 5% of global extent of an ecosystem type with IUCN status of CR or EN (c) EAAA is ecosystem determined to be of high priority for conservation by national systematic conservation planning
2. Priority Species and their Habitats		
A Threatened Species		
(a) Species and their habitats listed in EU Habitats Directive and Birds Directive (EU members only) or Bern Convention (signatory nations only) (b) IUCN Red List EN or CR species (c) IUCN Red List VU species (d) Nationally or regionally (e.g., Europe) listed EN or CR species	(a) EAAA for species and their habitats listed in Annex II of Habitats Directive (EU member states only), Annex I of Birds Directive (EU member states only), or Resolution 6 of Bern Convention (b) EAAA supports < 0.5% of global population OR < 5 reproductive units of a CR or EN species. (c) EAAA supports VU species (d) EAAA for regularly occurring nationally or regionally listed EN or CR species	(a) EAAA for species and their habitats listed in Annex IV of the Habitats Directive (see EU restrictions) (b) EAAA supports ≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species (c) EAAA supports globally significant population of VU species necessary to prevent a change of IUCN Red List status to EN or CR, and satisfies threshold (b) (d) EAAA for important concentrations of a nationally or regionally listed EN or CR species
B Range-restricted species		
	(a) EAAA for regularly occurring range-restricted species	(a) EAAA regularly holds ≥ 10% of global population AND ≥ 10 reproductive units of the species***
C Migratory and congregatory species		
	(a) EAAA identified per Birds Directive or recognized national or international process as important for migratory birds (esp. wetlands)	(a) EAAA sustains, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population at any point of the species' lifecycle

Criteria	Priority Biodiversity Feature	Critical Habitat
		(b) EAAA predictably supports ≥10 percent of global population during periods of environmental stress

Source: EBRD (2023)

8.1.7.2 APPROACH TO HIGH-LEVEL SCREENING OF CRITICAL HABITAT

As an initial step towards understanding the potential for the Project AoI for biodiversity to support CH, ERM considered the high-level screening layer and global dataset[15] developed by the UNEP-WCMC (2017[16]), which shows the global spatial distribution of likely or potential Critical Habitat, as defined by the IFC PS6 criteria. The high-level screening layer reveals that for the Project, CH may possibly be associated with the forest and wetland habitats associated with the Natura 2000 sites immediately south of the mine extraction site, including 'Georgenfelder Hochmoor', 'Fürstenau', 'Fürstenauer Heide und Grenzwiesen Fürstenau' in Germany as well as 'Východní Krušné hory' and the Ramsar (wetland) site 'Krusnohorská raseliniste' within the Czech Republic.

As an initial screening output, this suggests that the project is unlikely to directly interact with CH, however it is acknowledged that this is a relatively coarse resolution dataset, and that further analysis is still required at a more detailed level to rule-out the potential for CH associated with the Project.

8.1.7.3 APPLYING THE EBRD CRITERIA AND THRESHOLDS

At this early stage, it is not possible to undertake a full CHA without a complete biodiversity baseline dataset (i.e. baseline surveys for the Liebenau site are still pending), which will only be established during the ESIA. However, it is possible to conduct an initial high-level screening of the species and habitats potentially relevant to the Project, as per the baseline data that has been collated thus far. The purpose of the high-level screening of CH is to understand the potential for CH to be present in the Project area and to justify whether there is a need for further detailed CHA during the ESIA phase.

ERM undertook a high-level screening of the typical habitat and species features associated with the relevant Natura 2000 sites within the Project AoI for biodiversity as well as species and habitat data from the desktop assessment and from completed field surveys for the underground mine site and exploration tunnel. Species and habitats were screened against the CH and PBF qualifying criteria of EBRD as per Guidance Note 6 (EBRD, 2023), with the results summarised in Table 12.

[15] According to UNEP-WCMC (2017): "The composite 'Critical Habitat layer' draws on 20 global-scale datasets, of which 12 datasets support screening of Critical Habitat in the terrestrial realm and 15 datasets support screening in the marine realm". A raster layer attributes 1km^2 grid cells as 'likely' or 'potential' Critical Habitat, or unclassified based on a classification scheme reflecting biodiversity data layer alignment with IFC-PS6 Critical Habitat criteria/scenarios and inherent degree of certainty (in terms of presence on the ground).
[16] UNEP-WCMC (2017). Global Critical Habitat screening layer (Version 1.0). Cambridge (UK): UN Environment World Conservation Monitoring Centre. DOI: https://doi.org/10.34892/nc6d-0z73

TABLE 12 HIGH-LEVEL CRITICAL HABITAT AND PBF SCREENING OUPUTS

EBRD Criteria	CRITICAL HABITAT (CH) SCREENING	PRIORITY BIODIVERSITY FEATURE (PBF) SCREENING
Threatened / unique ecosystems	CH is likely under this criterion: • **Priority habitats conserved in several Natura 2000 sites (in terms of Annex I the EU Habitats Directive) qualify automatically as CH.** • Habitats protected by German Law may qualify as highly threatened or could meet the criterion threshold of being of 'high priority for conservation by national systematic conservation planning'. These could be CH, however further detailed analysis is required.	PBFs are likely under this criterion: • **EU 'priority habitats' conserved within several Natura 2000 sites qualify automatically as PBF.** • Several nationally/state level CR/EN species as per the Red List for Saxony (bats, reptiles, birds, invertebrates and plants) are known to occur in the Project AoI, however their regular occurrence would need to be established through surveys to verify if these qualify as PBFs.
Threatened species and their habitats	CH is likely under this criterion: • **For selected Natura 2000 sites, species listed in Annex IV of the EU Habitats Directive include several bat species that qualify automatically as CH.** • Several CR/EN species may qualify selected Natura 2000 sites and relevant habitats as CH. Information on the local population sizes of CR/EN species conserved within Natura 2000 sites is needed to determine if these are 'globally-important concentrations' that meet the thresholds for CH, which is currently not known.	PBFs are likely under this criterion: • **Species and respective habitats listed in Annex II of the EU Habitats Directive, Annex I of the EU Birds Directive and/or Resolution 6 of the Bern Convention qualify automatically as PBF**. Species may include birds, bats, mammals, fish, amphibians, reptiles, invertebrates as well as plants conserved within selected Natura 2000 sites.
Restricted-range species	Based on the current understanding of the baseline for the Project, whilst there are potentially several threatened and rare species of flora and fauna associated with the Natura 2000 protected areas and the Ramsar wetland across the border in Czech Republic, there are no documented locally endemic species or restricted-range species. This criterion is therefore unlikely to be fulfilled.	
Migratory and congregatory species	CH possible under this criterion: • Based on the current understanding of the baseline for the Project, it is unlikely that modified habitats associated with the Project would support significant concentrations of migratory species. • Natura 2000 sites also do not appear to support key migratory species. • Several of the Natura 2000 sites have concentrations of important European bird and mammal/bat species (i.e. EU Birds/Habitats Directive protected species) that may qualify the respective habitats as Critical Habitat, however further information on population sizes would be required to compare these against the thresholds for this criterion.	PBFs are unlikely under this criterion: • Based on the current understanding of the baseline for the Project, it is unlikely that habitats associated with the Project would support significant concentrations of migratory species and the Natura 2000 sites also do not appear to support key migratory species.

8.1.7.4 SUMMARY OF INITIAL FINDINGS AND CONCLUSIONS

The findings initially suggest that the Project AoI may contain CH and PBFs and that this is largely pertaining to the habitats and species associated with the Protected Areas (Natura 2000 sites) that could meet the following requirements:

- Significant concentrations of globally/regionally CR/EN species;
- EU priority habitats listed in Annex I of the EU Habitats Directive;
- Species listed in Annex IV of the EU Habitats Directive;
- Areas supporting concentrations of bird and mammal/bat species that may be nationally or regionally significant; and
- Unique biodiversity associated with the peat wetland ecosystems associated with the Ramsar wetland site across the border in Czech Republic (*note: possibility here for transboundary effects on CH/PBF).

Considering the relevant habitats and species for each Natura 2000 site (see below in Table 13), the following sites likely qualify as CH and PBF:

- Georgenfelder Hochmoor
- Bergwiesen um Schellerhau und Altenberg
- Müglitztal
- Trebnitztal
- Mittelgebirgslandschaft um Oelsen
- Fürstenauer Heide und Grenzwiesen Fürstenau

And the following sites only as PBF:

- Kahleberg und Lugsteingebiet
- Geisingberg und Geisingwiesen
- Osterzgebirgstäler
- Fürstenau

TABLE 13 SUMMARY OF CH AND PBF SCREENING

CRITERIA	RELEVANT FEATURES	RELEVANT NATURA 2000 SITES
Habitats that qualify automatically as CH and PBF include the 'priority habitats' (listed in terms of Annex I the EU Habitats Directive)	• 6230*Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe) • 7110* Active raised bogs • 7220*Petrifying springs with tufa formation (Cratoneurion) • 8160* Medio-European calcareous scree of hill and montane levels • 9180* Tilio-Acerion forests of slopes, screes and ravines • 91D0* Bog woodland • 91E0* Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*)	• Georgenfelder Hochmoor • Bergwiesen um Schellerhau und Altenberg • Müglitztal • Trebnitztal • Mittelgebirgslandschaft um Oelsen • Fürstenauer Heide und Grenzwiesen Fürstenau
Species listed in Annex IV of the EU Habitats Directive qualify automatically as CH and include several species of bats	Bats: • *Barbastella barbastellus* • *Myotis myotis* • *Rhinolophus hipposideros*	• Müglitztal • Trebnitztal • Mittelgebirgslandschaft um Oelsen
Species that qualify automatically as PBF include those listed in Annex II of the EU Habitats Directive, Annex I of the EU Birds Directive and/or Resolution 6 of the Bern Convention	Amphibians: • *Triturus cristatus* Mammals: • *Lutra lutra* • *Lynx lynx* Bats: • Barbastella barbastellus • *Myotis myotis* • *Rhinolophus hipposideros* Birds: • *Alcedo atthis* • *Anas crecca* • *Anas platyrhynchos* • *Bubo bubo* • *Ciconia nigra* • *Crex crex* • *Dryocopus martius* • *Ficedula parva* • *Gallinago gallinago* • *Glaucidium passerinum* • *Lanius collurio*	• Kahleberg und Lugsteingebiet • Geisingberg und Geisingwiesen • Müglitztal • Osterzgebirgstäler • Trebnitztal • Mittelgebirgslandschaft um Oelsen • Fürstenau • Fürstenauer Heide und Grenzwiesen Fürstenau

CRITERIA	RELEVANT FEATURES	RELEVANT NATURA 2000 SITES
	• *Milvus migrans* • *Milvus milvus* • *Pernis apivorus* • *Philomachus pugnax* • *Picus canus* • *Saxicola rubetra* • *Sylvia nisoria* • *Tetrao tetrix* • *Vanellus vanellus* Fish: • *Cottus gobio* Invertebrates: • *Callimorpha quadripunctaria* • *Carabus menetriesi pacholei* • *Phengatis (Maculinea) nausithous*	

Whilst CH may be largely restricted to the Natura 2000 network of formally Protected Areas, there is also the possibility also that habitats outside of the protected areas, but which are protected by German Law, may be 'highly threatened' or could meet the criterion threshold of being of 'high priority for conservation by national systematic conservation planning', Also, based on the screening done, there is the potential for habitats listed in the EU Habitats Directive and regionally/nationally threatened species to qualify as PBF, however further analysis will be needed to verify this during the ESIA.

There is therefore a possibility that the Project could interact with Critical Habitat and PBFs, even if more indirectly, however further detailed analysis would be needed following the collection and analysis of baseline data based on field surveys, in support of the ESIA phase. At the ESIA stage, it is recommended that a detailed CHA be done and that impacts on CH/PBF also be considered as part of the impact significance assessment and to inform what mitigation may be necessary. *This should also address possible transboundary impacts on potential Critical Habitat/PBF associated with the Ramsar wetland and Natura 2000 protected area within the Czech Republic.*

8.2 ANNEX B. IMPACTS ON NATURA 2000 SITES AND APPROPRIATE ASSESSMENT REQUIREMENTS

Background

In terms of Article 6 of the EU Habitats Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora), there are several requirements pertaining to the establishment and protection/management of Natura 2000 protected areas. Of particular relevance to the Zinnwald Lithium mining project, given the proximity of the Project to several identified Natura 2000 sites, is the following:

- ***6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*** *In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will* ***not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.***
- ***6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected.*** *It shall inform the Commission of the compensatory measures adopted.* ***Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety,*** *to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.*

Implicit in the implementation of the EU Habitats Directive is the application of the 'precautionary principle' (i.e. the absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action – EU, 2022[17]). In this sense, the emphasis of an assessment of a project/plan in relation to its potential effects on Natura 2000 site(s) requires one to demonstrate objectively (with supporting evidence) that:

- There will be no likely significant effects on a Natura 2000 site (as part of step 1 'screening'); or
- There will be no adverse effects on the integrity of a Natura 2000 site (stage 2 'appropriate assessment'); or
- There is an absence of alternatives to the plan/project, there are imperative reasons of overriding public interest to carry out the plan/project and compensation measures, which

[17] EU, 2022. Guidance document on assessment of plans and projects in relation to Natura 2000 sites: a summary. Online at: https://op.europa.eu/en/publication-detail/-/publication/a3a639e3-b943-11ec-b6f4-01aa75ed71a1/language-en

maintain or enhance the overall coherence of Natura 2000, are put in place (stage 3: 'derogation procedure').

This step-wise approach is illustrated in Figure 1.

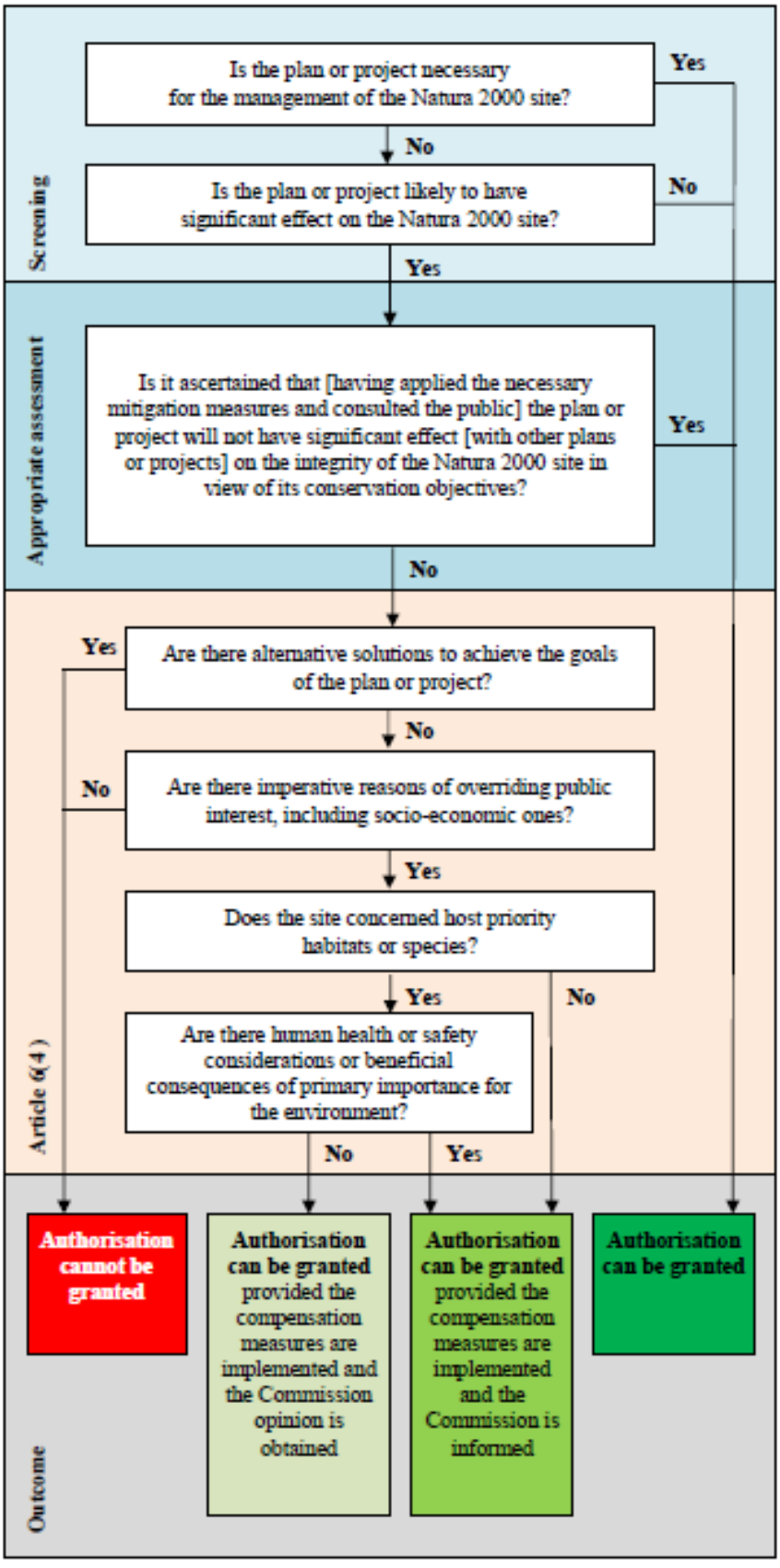
The 'screening' under stage 1 is a basic pre-assessment stage intended to determine whether in isolation or in combination with other projects or plans, the Project is likely to have a significant effect on a Natura 2000 site. If the screening concludes that significant effects on the site are likely, an Appropriate Assessment is required to be carried out under stage 2. EU (2022) suggest that such a conclusion may be easily reached without the need for an in-depth screening and be based on a simple consideration of the type, size or scale of the plan/project, or the characteristics of the Natura 2000 site, based on existing data, available knowledge and expert opinion. Importantly, if the occurrence of significant effects cannot be excluded with certainty, the plan or project has to undergo an Appropriate Assessment. Also, mitigation measures cannot be taken into account as part of this screening stage.

The 'Appropriate Assessment' (AA) under stage 2 is more detailed and involves the case-by-case evaluation of the possible implications of the development/activity, also in combination with other plans/projects, on the Natura 2000 site whilst considering the sites conservation objectives, as set out in a relevant management plan or other similar document for the Natura 2000 site. Once the AA has been complete, the competent national authorities then decide whether to approve the plan or project or not. In exceptional cases, a plan or project may be approved even if it has an adverse effect on a Natura 2000 site, for example under Article 6(4) of the EU Habitats Directive exceptions are possible for certain plans or projects where:

- they are considered necessary for imperative reasons of overriding public interest;
- there are no other alternatives; and
- all the necessary compensatory measures are in place to ensure that the overall coherence of the Natura 2000 Network is protected.

If a plan or project adversely affects priority habitat types or species, the conditions of overriding public interest are even stricter. They can only be justified for the imperative reasons of overriding public interest concerning human health and public safety, beneficial consequences for the environment, or other reasons, on condition that an opinion of the Commission has been given before granting the approval.

FIGURE 1 FLOW CHART SHOWING THE PROCEDURE FOR SCREENING AND APPROPRIATE ASSESSMENT AS PART OF ARTICLE 6(3) AND 6(4) OF THE EU HABITATS DIRECTIVE



Source: EU (2022)

Implications for the Project

1 Underground tunnel and mine

In the first instance of the underground mine and underground tunnel connecting the mine with the processing plant and tailings storage facility near Liebenau, the planned tunnel alignment will traverse one Natura 2000 site ('Fürstenau'), however since the tunnel will be a significant depth below ground there will be no direct effect on surface habitats or species.

One may conclude that since there are no direct impacts due to the Project components being outside of the Natura 2000 sites that further assessment would not be necessary, however as indicated in EU (2019[18]), "*a likelihood of significant effects may arise not only from plans or projects located within a protected site* ***but also from plans or projects located outside a protected site***".

Since the 'Fürstenau' Natura 2000 site is an important site for conserving bird species (designated as an SPA in terms of the EU Birds Directive), conservation objectives for the Natura 2000 site center around the protection of birds and their habitats, in particular resident breeding waterbirds. There is the potential for the Project to negatively impact on breeding waterbird species habitats as a result of possible ground water drawdown due to dewatering, influencing surface water and aquatic habitats within Natura sites and thereby bird habitats). However, the likelihood and significance of possible indirect impacts remains unclear but possible at this early stage, subject to further analysis of impact significance during the ESIA phase.

2 Above-ground infrastructure and activities: Liebenau processing plant and tailings storage facility and surface facilities at the old border pots

In the second instance for the planned above-ground facilities and activities (including the processing plant and tailings storage facility near Liebenau as well as surface facilities and activities located at the former border post) , these are not located within the identified boundaries of a Natura 2000 site and direct impacts on the conserved habitats and species are therefore unlikely.

However, there are several Natura 2000 sites located within close proximity to the planned protecting plant and tailing storage facility and the border post site, and the potential for indirect effects on species habitats and faunal behavior may result due to the potential for noise/vibration/artificial light/visual disturbance as well as hydrological impacts on aquatic habitats supporting key species (i.e. water quantity, quality, flow regime related mainly to the tailings storage at this site). For the Natura 2000 sites designated under the EU Birds Directive and which conserve breeding bird species of conservation importance, this is particularly relevant as there is the potential for the Project to negatively impact on breeding bird species sensitive to noise/vibration/artificial light/visual disturbance. This includes the following Natura 2000 sites:

- Fürstenau
- Kahleberg und Lugsteingebiet

[18] EU (2019). Commission Notice C(2018) 7621 final, Brussels, 21.11.2018. Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 82/42/EEC. Online at: https://op.europa.eu/en/publication-detail/-/publication/11e4ee91-2a8a-11e9-8d04-01aa75ed71a1)

- Osterzgebirgstäler
- Východní Krušné hory

Since impacts on conserved bird species and the conservation objectives set for these species for each of the relevant Natura 2000 sites remain unknown/unclear at this early stage of the Project, further assessment will be necessary in order to determine the significance of any possible impacts on conserved bird species in particular. Significance of impacts would require understanding factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned (EU, 2019). This would therefore be subject to further analysis of impact significance during the ESIA phase.

Given the uncertainty of the significance of impacts on breeding birds conserved within the Natura 2000 sites that overlap with the Project AoI for biodiversity, the application of the precautionary principle that underpins Article 6 of the EU Habitats Directive, this would require at least that a stage 1 'screening' be undertaken to determine if significant impacts could result from the Project and which would then inform the need for stage 2 'Appropriate Assessment' should there be the possibility for significant adverse effects on a Natura 2000 site. This should be established through a formal review of the conservation objectives set for each Natura 2000 site that intersects the Project AoI (contained in the Natura site management plans), in order to determine the potential significance of the impact on the integrity[19] of the Natura 2000 site, and whether this can be avoided altogether or minimized through the implementation of mitigation measures or alternative solutions.

It is also recommended that Natura 2000 sites supporting aquatic/semi aquatic habitats such as streams, rivers, lakes and wetlands (bogs, mires) as well as aquatic biodiversity (amphibians and fish species as well as mammals - otter), also be subject to screening of the potential for water quality and quantity impacts related to mining operations to affect the integrity of these habitats, due to the possibility for connections and interactions with surface water and groundwater. Possible habitats of relevance include the following (some of which are 'priority natural habitat types' indicated with an asterix*):

3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
3160	Natural dystrophic lakes and ponds
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
7110*	Active raised bogs
7120	Degraded raised bogs still capable of natural regeneration
7140	Transition mires and quaking bogs
7220*	Petrifying springs with tufa formation (Cratoneurion)
7230	Alkaline fens
91D0*	Bog woodland

[19] The term 'integrity' in relation to Natura 2000 sites refers to the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated. Source of information: EU (2019). Commission Notice C(2018) 7621 final, Brussels, 21.11.2018. Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 82/42/EEC. Online at: https://op.europa.eu/en/publication-detail/-/publication/11e4ee91-2a8a-11e9-8d04-01aa75ed71a1)

91E0*	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

These habitat types are associated with the following Natura 2000 sites (contributing to protected areas designation under the EU Habitats Directive) and which should be subject to initial screening for potential indirect impacts to aquatic habitats by understanding the potential pathways for pollution risk and water quantity impacts linked to surface/ground water for the relevant aquatic habitats:

- Bergwiesen um Schellerhau und Altenberg
- Mittelgebirgslandschaft um Oelsen
- Müglitztal
- Trebnitztal
- Georgenfelder Hochmoor
- Fürstenauer Heide und Grenzwiesen Fürstenau

Natura 2000 sites with aquatic biodiversity (fish, amphibians, mammals - otter) that should also be screened for potential impacts to water quality/quantity and the aquatic habitats supporting these species should include:

- Mittelgebirgslandschaft um Oelsen
- Müglitztal
- Trebnitztal

Finally, it is also recommended that Natura 2000 sites that may be affected by associated facilities (e.g. linear powerline, gas pipeline infrastructure) also be considered, however since the alignments of this infrastructure is still not known for certain, there is limited information to inform which Natura 2000 sites could be affected. Once details are known, a proximity analysis of infrastructure relative to natura 2000 site boundaries should be undertaken to inform impact screening and Appropriate Assessment requirements for this additional infrastructure and related activities.

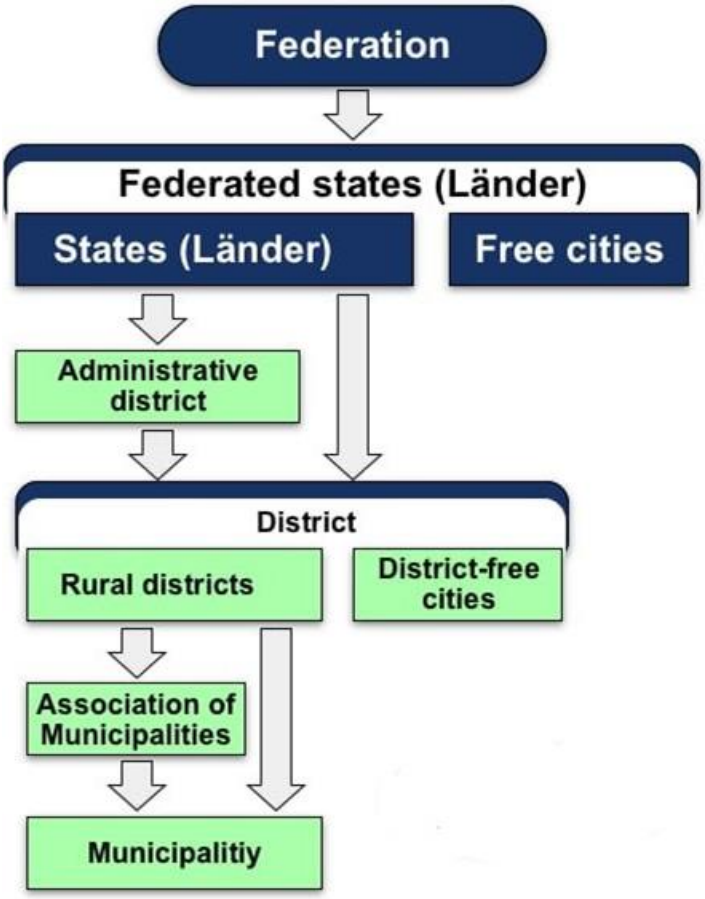
8.3 ANNEX C. DESKTOP SOCIOECONOMIC AND HEALTH STUDY

8.3.1 ADMINISTRATION AND GOVERNANCE

8.3.1.1 GERMANY

Germany is divided into 16 federal states (Bundesländer), as illustrated in Figure 2 below, each with its own government and administrative structures. The respective governments have the capacity to influence federal politics via participation in the Federal Council. Each state may have their own constitution, different state-level parliamentary elections, and distinct government structures. Figure 3 below shows Germany’s administrative levels.

FIGURE 2 GERMANY'S ADMINISTRATIVE AND TERRITORIAL STRUCTURE



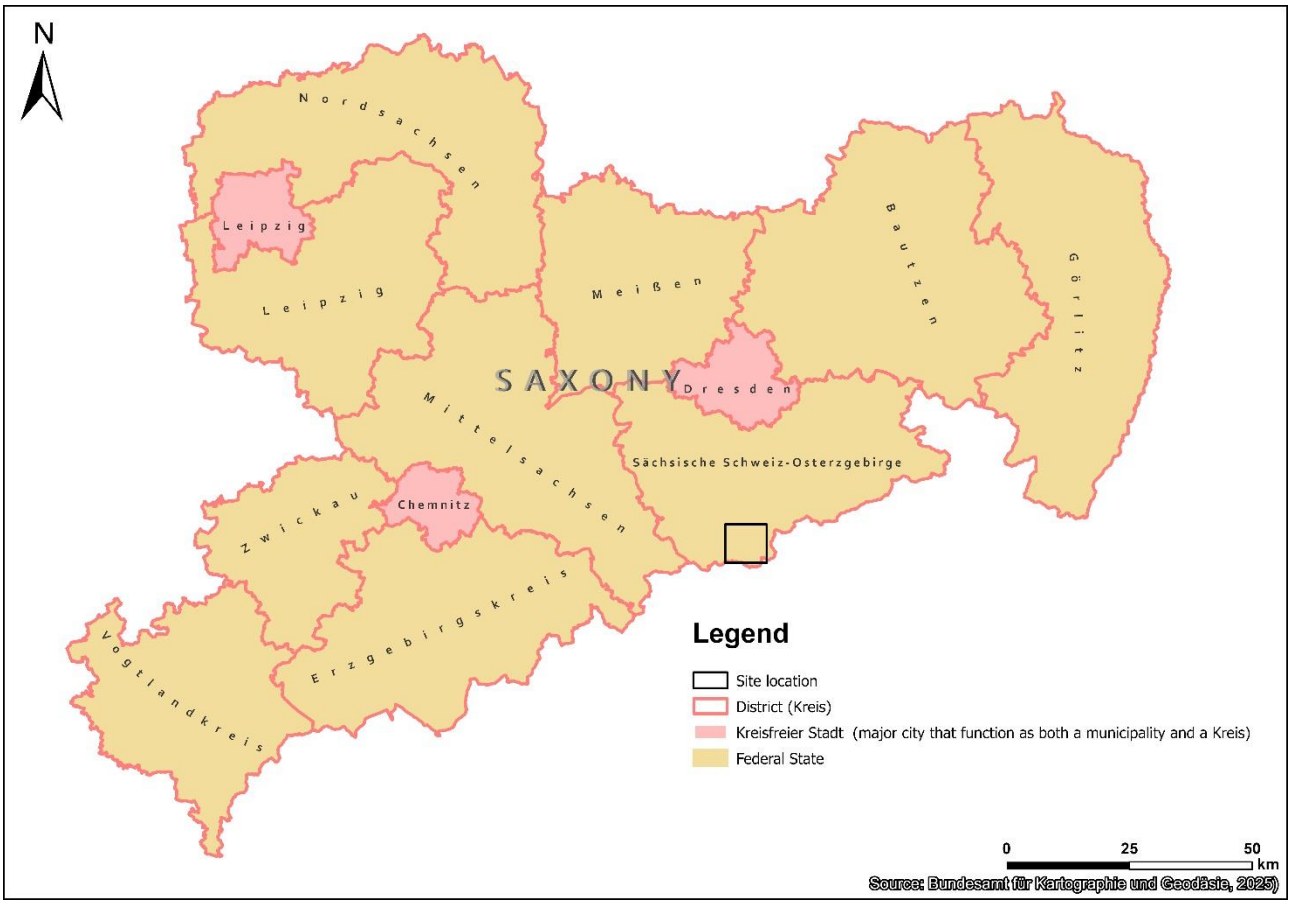
Source: https://ru-geld.de/en/country/administrative-division.html, accessed in December 2024.

FIGURE 3 FEDERAL STATES IN GERMANY

Source: ERM 2025

The Project is located in the State of Saxony (Freistaat Sachsen), one of Germany's eastern federal states. Saxony is comprised of 419 municipalities, which are grouped into ten districts (Landkreise) and three independent cities (Kreisfreie Städte). The capital of Saxony is Dresden, which is one of the three independent cities, alongside Leipzig and Chemnitz.

FIGURE 4 DISTRICTS OF SAXONY AND CAPITAL CITIES



Source: ERM 2025

In the district of Saxon Switzerland-Eastern Ore Mountains, the administration is divided between the district council (Kreistag) and the municipal councils (Gemeinderat) of each town or municipality.[20] The district council oversees broader regional governance, including key decisions on infrastructure, planning, and development, while each municipality has its own mayor (Bürgermeister) and municipal council responsible for local governance and decision-making.[21]

The settlements listed in Figure 4 are part of larger municipalities, with administrative duties typically handled at the municipal level unless otherwise specified. Zinnwald-Georgenfeld is

[20] Source: The difference between Kreistag and Gemeinderat, retrieved from: https://www.loebnitzwahl.de/der-unterschied-zwischen-kreistags-und-gemeinderatswahlen/, accessed in January 2025.
[21] Source: Espelkamp, retrieved from: https://www.espelkamp.de/Rathaus/B%C3%BCrgermeister/index.php?object=tx,2862.206.1&NavID=2862.386&La=1#:~:text=Der%20B%C3%BCrgermeister%20vertritt%20gemeinsam%20mit,alle%20wichtigen%20Angelegenheiten%20zu%20unterrichten., accessed in January 2025.

part of the Altenberg municipality and does not have its own independent administration. It is managed by the Mayor of Altenberg and the Altenberg municipal council.

The district council has overarching responsibility for regional matters, but individual municipalities have decision-making powers on local issues such as zoning, land use, and local development plans. This multi-level governance structure ensures that both regional and local needs are addressed in the decision-making process.

8.3.1.2 CZECH REPUBLIC

The Czech Republic is a unitary State which comprises three levels of governance: central, regional, and municipal. The decentralisation process started in 1990 and continued in 2000 with the establishment of a new tier at the regional level. The District – deconcentrated authority – was eliminated in 2002, and its competences were redistributed to the other levels of governance. However, districts still formally exist. They are used for statistical purposes and for the needs of territorial division of the specialised state administration. The Czech Republic is composed of 14 Regions (*kraje*) including the City of Prague, which has the status of both a Region and a Municipality, and 6,258 Municipalities (*obce*). The central government has national legislative responsibilities in all areas. The regional level is in charge of education (secondary education and funding), transport (road network, regional public transport), social services, environment (protection of fauna and flora), regional economic development, planning (approval of planning and zoning documents at the regional level), health care, including drug prevention, youth (funding), sport (funding), fire safety, cohesion (regional boards on cohesion), tourism (development plans in the field of tourism, implementation and monitoring of their performance), prevention of criminality, inter-regional and international cooperation with foreign territorial authorities. The local level is in charge of local development, environment (water management and treatment, urban heating, waste processing, environmental protection), health services, social welfare (social assistance and youth policy), transport (public transport, management of local roads), local planning (management and maintenance of open spaces, cemeteries), sport, culture, fire-fighting and prevention, municipal police, primary education, and housing.[22]

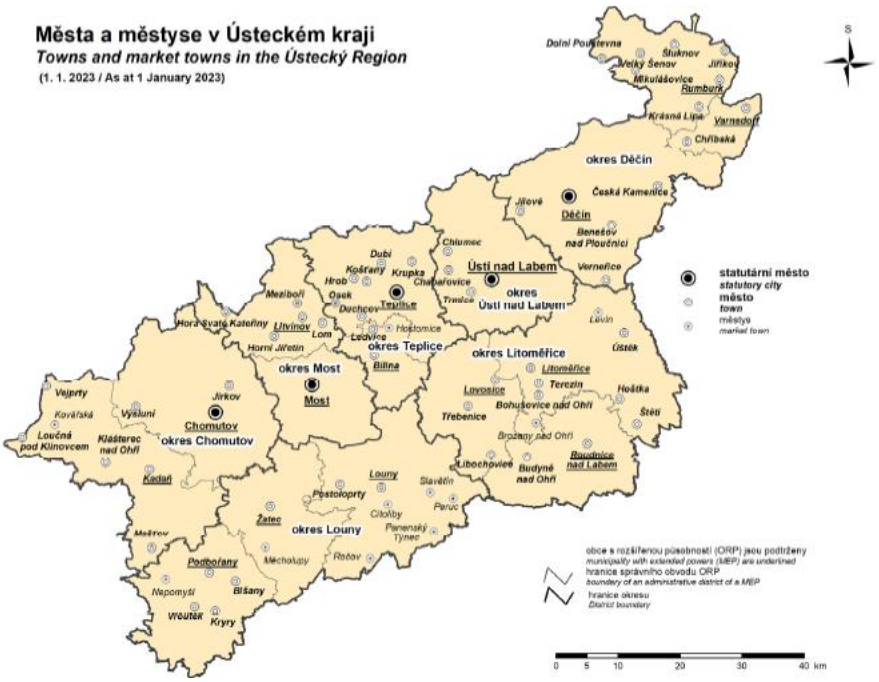
From a territorial perspective, the territory of the country is divided into 14 regions, which are further divided into 205 administrative districts of municipalities with extended powers, 388 administrative districts of municipalities with an authorized municipal office, 6,258 municipalities and 4 military districts. Of the total number of municipalities, 610 municipalities have the status of a city (of which 27 are statutory cities) and 231 municipalities have the status of a township. The capital city of Prague has a specific position, which is divided into 22 administrative districts and 57 urban districts. In addition, the territory of 76 districts is defined.

The Ústecký Region is divided into seven Districts [the Děčín District, the Chomutov District, the Litoměřice District, the Louny District, the Most District, the Teplice District (where Dubi municipality and Cinovec village are located within the Direct AoI), and the Ústí nad Labem District] – see Figure 5.[23] Dubi is a municipality with Teplice administrative district of

[22] Source: European Committee of the Regions, retrieved from: https://portal.cor.europa.eu/divisionpowers/Pages/Czech Republic-intro.aspx, accessed in March 2025
[23] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025

municipalities with extended powers and comprises seven smaller settlements: Dubí, Běhány, Bystřice, Cínovec, Drahůnky, Mstišov and Pozorka.

FIGURE 5 TOWNS IN THE ÚSTECKÝ REGION, CZECH REPUBLIC (2023)[24]



8.3.2 DEMOGRAPHICS

8.3.2.1 GERMANY

Population Overview

As of June 2023, according to the Federal Statistical Office, Germany´s population was about 83.5 million people, with approximately 42.3 (50.7%) million women and 41.2 (49.3%) million men.[25] In the state of Saxony, as of December 2023, the total population was just below 4.1 million or 4.90% of Germany's total population.

In 2021, women made up about 50.9% of the population within Saxony, compared to 49-49.1% men. The state´s population density is estimated at about 218.9/km^2 and the annual population change from 2011 to 2021 was approximately 0.040% showing that the population remained quite stable. The greatest number of inhabitants in Saxony are located within Leipzig City, Dresden, and Erzgebirgskreis, respectively. [26]

[24] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025

[25] Source: Statistiches Bundesamt, Current Population of Germany, retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Population/Current-Population/_node.html, accessed in December 2024.

[26] Source: City Population, Sachsen, retrieved from: https://www.citypopulation.de/en/germany/admin/14__sachsen/, accessed in December 2024.

In Saxony, particularly in the Saxon Switzerland-Eastern Ore Mountains district, the population composition reflects notable increases and decreases in overall numbers across municipalities, as highlighted in Table 14.

Based on Statista, the total population of Saxon Switzerland-Eastern Ore Mountains district in 2024 was 246,011.[27] At the district level, data from Statista indicates a slight population increase in 2023. Comparing the figures for December 2022 (245,233 residents), to the end of 2023 (246,011 residents), there is an increase of 778 residents, reflecting a relatively low growth rate of approximately 0.32%.

Detailed demographic data, such as the proportion of male and female populations, is unavailable at the settlement levels and will need to be collected as part of the ESIA baseline data collection.

[27] Source: Development of the population in the rural district of Sächsische Schweiz-Osterzgebirge from 2010 to 2023 retrieved from: https://de.statista.com/statistik/daten/studie/1184547/umfrage/entwicklung-der-gesamtbevoelkerung-im-landkreis-saechsische-schweiz-osterzgebirge/. Accessed in December 2024.

TABLE 14 POPULATION COMPOSITION WITHIN THE SOCIOECONOMIC AND HEALTH DIRECT AOI

	Administrative Division	Total Population as of December 2022	Male population as of December 2022[28]	Female population as of December 2022
District	Saxon Switzerland-Eastern Ore Mountains	246.204	49.30%29	50.70%
Municipality	Altenberg	7,579	49.91%	50.09%
	Bad Gottleuba-Berggieshübel	5,427	49.66%	50.30%
	Liebstadt	1,233	51.18%	48.66%
	Glashütte	6,564	50.23%	49.76%
Cities/Towns[30]	Altenberg	1,968	-	-
	Geising	1,157	-	-
Settlements (Ortsteile)	Zinnwald-Georgenfeld	377	-	-
	Gottgetreu	14	-	-
	Fürstenau	198	-	-
	Rudolphsdorf		-	-
	Müglitz	27	-	-
	Fürstenwalde	290	-	-
	Löwenhein	185	-	-
	Lauenstein	515	-	-
	Liebenau	389	-	-
	Bärenstein	2,249	-	-
	Börnersdorf-Breitenau		-	-

[28] Source: City population, retrieved from: https://citypopulation.de/de/germany/census/sachsen/14628010__altenberg/, accessed in January 2025.
[29] Source: saxony.de, retrieved from: https://www.statistik.sachsen.de/html/bevoelkerungsstand-einwohner.html, accessed in January 2025.
[30] German *Siedlung*

	Administrative Division	Total Population as of December 2022	Male population as of December 2022[28]	Female population as of December 2022
	Hennersbach		-	-
	Breitenau		-	-
	Oelsen		-	-
	Waltersdorf bei Liebstadt	150	-	-
	Döbra		-	-
	Börnchen		-	-
	Dittersdorf	3,600	-	-

Source: Population update based on census data from May 15, 2022, retrieved from: https://www.statistik.sachsen.de/html/bevoelkerungsstand-einwohner.html, accessed in January 2025.

The age patterns across the four municipalities show similar trends, with a strong representation of working-age adults, a steady proportion of children and youth, and a significant elderly population. These factors reflect a stable community structure with particular attention needed for supporting the elderly and youth in these regions. In rural areas like Bad Gottleuba-Berg, there is a notable concentration of older individuals, which could have implications for community services and resources aimed at supporting an aging population.[31] The average age of the population in the four municipalities which is presented in Table 15, is higher than the national / regional average, potentially due to the larger proportion of elderly residents in rural areas. Detailed data on age is not available at the settlement level and will need to be collected for the ESIA baseline.

TABLE 15 AGE GROUPS WITHIN THE DIRECT SOCIOECONOMIC AND HEALTH AOI

Age Group	Altenberg Population (%)	Bad Gottleuba-Berggießhübel Population (%)	Liebstadt Population (%)	Glashütte Population (%)	Analysis
0-14 years (children)	12.8%	13%	14.03%	14.04%	Relatively similar proportions of children, indicating potential for future community development.
15-24 years (youth)	3.2%	3.26%	3.49%	3.52%	A small but significant portion of the population, highlighting the youth demographic.
25-64 years (adults/working age)	54.5%	53.8%	54.2%	54.3%	The majority of the population falls within the working-age group, essential for economic activities and growth.
65+ years (elderly)	29.6%	29.9%	28.3%	28.2%	Significant presence of senior residents, higher than national / regional averages signifying the potential for strains on social services.

[31] Source: City Population, retrieved from: https://citypopulation.de/de/germany/sachsen/s%C3%A4chsische_schweiz_oster/14628010__altenberg/ , accessed in January 2025.

Household and Family Composition

In Germany, there are 41,330 million households as of 2023, with a significant proportion being one-person households (41.1%), two-person households (33.5%), and households with children and single parents not specifically detailed in the current data[32]. Overall, most households have 1-2 people, and only a minority of households have five or more people.

Saxony has a total of 2.1 million households, with almost half (44.8%) being single-person households. Two-person households make up the largest share (56.0%), followed by three-person households (34.7%), four-person households (10.8%), and households with five or more members (7.9%).

In total, there are 4 million household members across all these households in Saxony, resulting in an average household size of 1.91 people. This reflects a trend of smaller households in this state. Single-person households dominate, emphasizing the demographic shift towards smaller family units or individuals living alone. [33]

Specific data on the household composition for the municipalities (and hence settlements) within the Direct Socioeconomic and Health AoI is not publicly available or up-to-date.

Nationality and Ethnicity

As of December 31, 2023, Germany's foreign population was approximately 13.4 million, with 1.6 million born in Germany and 11.8 million born abroad. This equates to about 15.8% of Germany's total population, an increase from 14.6% in 2022.[34]

At the end of 2023, the Free State of Saxony had a population of approximately 4.09 million, including around 3,757,065 German nationals and 331,866 foreign nationals, who made up 8.1% of the population. This proportion is significantly lower than the national average of 15.2%, placing Saxony 13th among Germany's federal states in terms of foreign population share. According to the Central Register of Foreign Nationals, Saxony's foreign population comprises individuals from about 180 nationalities. The largest groups were Ukrainians (18.8%), Syrians (10.7%), and Poles (7.2%). Additionally, 27.2% of foreign residents in Saxony in 2023 held citizenship from an EU country.

There are four officially recognised national minorities in Germany: the Danes, the Frisians, the German Sinti and Roma, and the Sorbs. [35] However, specific data regarding the presence and distribution of these minorities within the Socioeconomic and Health Direct AoI is not currently available. This information will need to be collected for the ESIA to ensure that any potential impacts on these groups are adequately considered. The majority of national minorities in Saxony are the Sorbs, numbering around 40,000.

[32] Source: Destatis, retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Population/Households-Families/Tables/households.html, accessed in January 2025.
[33] Source: Statistisches Bundesamt, Households by household size and household members (2023), retrieved from: https://www.destatis.de/DE/Themes/Society-Environment/Population/Households-Families/Tables/1-2-private-households-federal-states.html, accessed in December 2024.
[34] Source: Statistiches Bundesamt, Foreign population b place of birth and selected citizenships (2023), retrieved from https://www.destatis.de/EN/Themes/Society-Environment/Population/Migration-Integration/Tables/foreigner-place-of-birth.html, accessed in December 2024.
[35] Source: Federal ministry of the Interior and Community, National minorities, retrieved fromhttps://www.bmi.bund.de/DE/themen/heimat-integration/gesellschaftlicher-zusammenhalt/minderheiten/minderheiten-in-deutschland/minderheiten-in-deutschland-node.html, accessed in December 2024.

Other than Germans, the foreign population in the municipalities of Altenberg, Bad Gottleuba, Glashütte, and Liebstadt mainly comes from European countries, with notable groups from Poland, Romania, and Ukraine. There are also smaller populations from countries such as Syria and Italy.

Table 16 below shows the distribution of foreign nationals by country of origin in the municipalities of Altenberg, Bad Gottleuba, Glashütte, and Liebstadt, based on 2022 data. It highlights the main foreign populations from Poland, Romania, and Ukraine, as well as smaller groups from countries such as Syria and Italy.

TABLE 16 FOREIGN POPULATION BY COUNTRY OF ORIGIN IN 2022

Municipality	Germany	Poland	Romania	Ukraine	Syria	Italy	Other countries
Altenberg	7,227	18	21	75	3	3	232
Liebstadt	1,221	0	0	3	0	0	9
Bad Gottleuba-Berggießhübel	5,359	6	0	4	9	0	49
Glashütte	6,445	5	3	30	8	0	73

Source: Distribution of foreign nationals by country of origin, retrieved from: https://citypopulation.de/de/search/,

Table 17 displays the synthesised data for 2022, including the total number of foreigners as well as the male and female populations for the two cities in the Direct Socioeconomic and Health AoI.

TABLE 17 TOTAL NUMBER OF FOREIGNERS IN ALTENBERG AND BAD GOTTELUBA-BERGGIEßHÜBEL

Municipalities	Total Foreigners	Foreigner males	Foreigner females
Altenberg	345	176	169
Bad Gottleuba-Berggießhübel	245	125	120
Liebstadt	56	31	25
Glashütte	291	152	139

Source: Maps, analysis and statistics about the resident population for the cities Altenberg and Bad Gottleuba-Berggießhübel, retrieved from: https://ugeo.urbistat.com/AdminStat/it/de/demografia/stranieri/glashutte%2c-stadt/20193888/4 accessed in January 2025.

Religion

Existing statistics on religious affiliation in Germany are based on estimates and self-reported data provided by religious communities. These figures are not entirely accurate or comprehensive, as they rely on voluntary reporting by the groups themselves or external estimations.[36]

The majority of Germans are Christian, with 29.9% Roman Catholic and 29.8% Protestant, while 1.3% are Orthodox Christians. Islam is the second-largest religion, making up 6.1% of

[36] Source: Evangelical focus. Retrieved from: https://evangelicalfocus.com/europe/18926/germans-no-longer-able-to-register-their-religious-affiliation. Accessed in January 2025.

the population, with Germany having the second-largest Muslim population in Europe. Non-believers form the largest group at 34%, with atheism and agnosticism more prevalent in Eastern Germany, due to the Communist regime's discouragement of religious belief.[37]

In summary, Germany avoids collecting detailed religious data in official records or censuses to uphold constitutional protections and historical safeguards against persecution. The available statistics on religion are therefore approximate and derived from non-governmental sources.

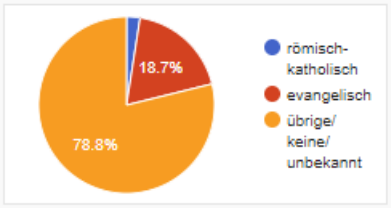
Drawing on publications from the German Bishops' Conference and the Evangelical Church in Germany, 24% of the population identifies as Roman Catholic, 21.9% as EKD Protestant, 3.8% as Muslim, 4.1% as belonging to other religious communities, while 46.2% are unaffiliated with any religion. [38]

Less than 20% of the population in Saxony are members of the Protestant or Catholic Church. However, since 1990, both existing and newly established religious and cultural communities have grown, driven by migration from western Germany and abroad.[39]

Detailed statistical data on religious affiliations in the municipalities of the Saxon Switzerland-Eastern Ore Mountains district as of 2022 is shown in Figure 6 below.

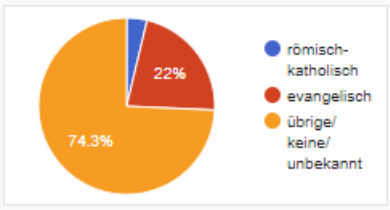
[37] Source: World population review, retrieved from: https://worldpopulationreview.com/countries/germany, accessed in January 2025.
[38] Source: Forschungsgruppe Weltanshauungen in Deutschland (2023), retrieved from: https://fowid.de/meldung/religionszugehoerigkeiten-2023, accessed in December 2024.
[39] Source: Sächsische Landeszentrale für Politische Bildung, retrieved from: https://www.slpb.de/veranstaltungen/veranstaltungsreihen/sichtbare-vielfalt-religionen-in-sachsen#:~:text=Auf%20den%20ersten%20Blick%20spielt,aus%20Westdeutschland%20und%20dem%20Ausland. Accessed in January 2025.

FIGURE 6 RELIGIOUS AFFILIATIONS FOR THE MUNICIPALITIES WITHIN SAXON SWITZERLAND-EASTERN ORE MOUNTAINS DISTRICT FOR 2022



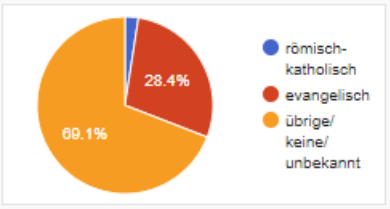
Religion (C 2022)	
römisch-katholisch	134
evangelisch	1.014
übrige/keine/unbekannt	4.279

Bad Gottleuba-Berggießhübel



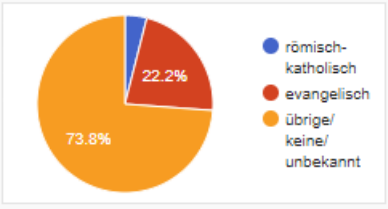
Religion (C 2022)	
römisch-katholisch	245
evangelisch	1.442
übrige/keine/unbekannt	4.876

Glashütte



Religion (C 2022)	
römisch-katholisch	30
evangelisch	348
übrige/keine/unbekannt	847

Liebstadt



Religion (C 2022)	
römisch-katholisch	303
evangelisch	1.680
übrige/keine/unbekannt	5.596

Altenberg

Source: City Population, retrieved from: https://citypopulation.de/de/search/, accessed in January 2025.

In all four municipalities, most of the population (67–77%) identifies as "other/none/unknown." Evangelical Christians form a minority, ranging from 18.3% in Bad Gottleuba to 27.5% in Liebstadt, while Roman Catholics consistently account for a small share, between 1% and 3.7%. This reflects a predominantly secular or non-religious population in the district, with evangelical Christianity as the most prominent religious affiliation and low representation of Roman Catholics.

Detailed information on religious affiliations in the settlements within these four municipalities is not publicly available. This information will need to be collected during the ESIA.

Language

German is the official language of Germany, and the language has 250 wide-ranging dialects. In Saxony, the primary dialect spoken is Upper Saxon German (Obersächsisch), a variant of Central German that is distinct within the broader spectrum of German dialects.[40]

There is no further official or more specific data regarding the percentage of languages spoken within the Saxon Switzerland-Eastern Ore Mountains district and the Direct Socioeconomic and Health AoI. This information will be collected during the ESIA baseline.

Vulnerable Groups

According to EBRD ESP (2024), vulnerable people are defined as: *" Persons or groups of people who: (i) may be more adversely affected by project impacts than others due to being discriminated, marginalised and/or excluded on the basis of characteristics such as, but not limited to, their sex or gender, sexual orientation, gender identity, gender expression or sex characteristics, religion, ethnicity, indigenous status, age (including children, youths and the*

[40] Source: Freistaat Sachsen, retrieved from: https://www.freistaat.sachsen.de/sprachen-in-sachsen-5308.html, accessed in January 2025.

elderly), physical or mental disability, literacy, political views and affiliations, or social status and (ii) people in vulnerable situations, such as people living below the poverty line, the landless, single-headed households, natural resource-dependent communities, migrant workers, refugees or internally displaced people.". The ESIA will include an assessment of vulnerability in order to identify who are the vulnerable people in the context of the Project. Nevertheless, the assessment of vulnerability will start by considering generic groups which are typically considered vulnerable in relation to major development projects because of the considerations presented below:

- Women: Women are often considered a vulnerable group due to ongoing gender disparities in areas such as income, representation, and domestic responsibilities, leading to economic and social disadvantages. They are also at higher risk of experiencing domestic violence and gender-based harassment.
- Children: Children are typically dependent on older household or community members to access resources. If a child lacks proper adult representation or comes from a low-income or ethnic minority background, they may be more susceptible to exploitation within the community or workplace.
- Youth: Defined by the United Nations (UN) as individuals aged 15 to 24, youth are at risk of exploitation through poor labour practices, due to factors like lack of work experience, qualifications, and skills. Even youth with qualifications may struggle to find job opportunities, and those who are unemployed with dependents or financial obligations (such as families or rent) face increased vulnerability.
- Elderly / retired: Older adults face vulnerabilities related to their limited ability to increase income, access additional finances, and obtain healthcare, while being more prone to disease and disability. Access to pensions may depend on the number of years in formal employment, with lower-income individuals more likely to have informal employment histories. Chronic diseases such as cardiovascular conditions and diabetes are prevalent among the elderly, and medical expenses are often unaffordable for lower-income retirees.
- Physical/mental health and disability and underlying health conditions: Individuals with limited physical mobility or mental health issues may face difficulties in participating in decision-making and accessing employment opportunities. Disabled individuals are often subject to social exclusion, marginalisation, and greater vulnerability to change. Those with underlying health conditions may experience worsened health outcomes due to environmental changes.
- Low-income households: Households with low incomes typically have fewer resources and are less likely to have savings or access to credit, which makes them more vulnerable to economic shocks and changes.
- Ethnic minorities: Ethnic minorities may face marginalisation, limiting their access to services such as healthcare, education, credit, and freedom of expression. Additionally, many ethnic minority groups speak languages different from those of the dominant group, further hindering their integration and access to services.
- Refugees / asylum seekers and migrant workers: Refugees, asylum seekers, stateless individuals, and irregular migrants are often exposed to heightened risks and require specialised care, support, and protection. Migration can exacerbate health risks, often

linked to poor working conditions, poverty, overcrowded housing, psychological stress, and language barriers, such as lack of proficiency in German.[41]

Vulnerable Groups Within the Direct Socioeconomic and Health AoI

It is reasonable to assume that women, children, youth, the elderly, and other vulnerable groups are present within the Direct Socioeconomic and Health AoI. Specific potential vulnerability factors within the local population are discussed below and will be further assessed following the ESIA baseline data collection, which will provide a contextual understanding of the groups typically considered vulnerable.

Women

Women in the Saxon Ore Mountains-Eastern Region remain underrepresented in local politics, with only 11.63% in the district council and 19% in town and municipal councils. To address this disparity, the region participates in the federal "Action Program Municipality – Women in Politics," which offers mentoring, training, and structural support to increase women's political participation and create inclusive frameworks.[42] Additionally, the Saxon State Ministry of Justice and for Democracy, Europe, and Equality supports gender equality and combats gender-based violence through initiatives such as funding for equality projects, women's shelters, anti-discrimination work, and specialised counselling for victims of exploitation and violence.[43]

Currently, no specific data are available about the vulnerabilities or challenges faced by women in the municipalities within the Direct Socioeconomic and Health AoI.

Children and Youth

There are no in-depth data available regarding children and youth as a potentially vulnerable group within the Direct Socioeconomic and Health AoI, but this will be further assessed during the ESIA baseline phase to identify specific vulnerabilities and needs in the local context.

The Direct Socioeconomic and Health AoI does host a significant population of young individuals engaged in agricultural work who are simultaneously pursuing education in farming and related practices.[44] However, as the Project is expected to generate a limited reduction of the leased area of fodder crops by a dairy cooperative, youth are not considered to be disproportionately affected by potential displacement impacts. Nevertheless, potential displacement impacts as well as the specific context of youth will be further examined in the ESIA.

[41] Source: *Social Services for Vulnerable Groups in Germany*, Danielle Gluns, University of Münster, March 2018, LoGoSO Research Papers Nr. 3, retrieved from: https://refubium.fu-berlin.de/bitstream/handle/fub188/21906/3_Social_Services_for_Vulnerable_Groups_in_Germany.pdf?sequence=1&isAllowed=y accessed in January 2025.
[42] Source: Landratsamt Pirna, retrieved from: https://www.landratsamt-pirna.de/frauen-in-die-politik.html, accessed in January 2025.
[43] Source: Landratsamt-Pirna, retrieved from: Fördermittel - Landkreis Sächsische Schweiz - Osterzgebirge, accessed in January 2025.
[44] Source: Liebenauer Agrar GmbH, retrieved from: https://www.liebenauer-agrar-gmbh.de/, accessed in January 2025.

Elderly / Retired

In Bad Gottleuba-Berggießhübel, 26.2% of the population is aged 65 and over, which is significantly higher than the national average of 22.3%[45] and the regional average for Saxony at 26.8% as of December 2023[46]. Similarly, in Altenberg, 23.4% of the population falls within the 65+ age group, exceeding the national average but slightly below the regional figure. Both areas demonstrate a notable presence of elderly individuals, who may be more vulnerable to potential economic (e.g. local price inflation) and health impacts from the Project due to their fixed incomes, age and associated health conditions.

Individuals with limited physical mobility or other disabilities

There is no specific data available regarding the number of people with disabilities in the Direct Socioeconomic and Health AoI. However, it can be reasonably assumed that individuals with disabilities, like other vulnerable groups, are present in the area. For example, the Hof Altenberg, which was established in 2019, provides employment opportunities for people with disabilities. It offers work positions, fostering a normalized lifestyle through integration within the community and intensive support, enabling social participation. The farm's structured environment, including gardening and agricultural activities, allows for partial self-sufficiency.[47]

These individuals may be particularly vulnerable to project-related impacts, such as increased exposure to air pollutants or respiratory issues resulting from changes in local environmental conditions. Additionally, these individuals may not be able to access project-related benefits on equivalent terms to others in their communities such as employment and business development opportunities.

Low Income Households

There is a significant increase in households in the district of Saxony Eastern Ore Mountains receiving housing allowance from 2022 to 2023 which indicates either an expansion in eligibility (e.g., legislative changes) or increased economic pressure on households in the district. The relatively high proportion of rent subsidies highlights a demand for rental housing affordability. In 2023, the total number of households receiving housing allowance increased by 94.4% showing that more families and individuals are struggling to afford housing costs. This could be due to a shortage of rental accommodation (which has been raised during engagements which the Project has had with local businesses), rising rents, increased cost of living, or stagnating incomes. Households receiving rent subsidies grew by 92.7% showing that a significant number of tenants face difficulties paying rent, highlighting challenges in affordable rental housing availability, homeowner subsidies rose by 120% implies that more homeowners are unable to meet their housing-related expenses (e.g., mortgage payments or maintenance costs), which may indicate financial strain among property owners, and partial households covered under housing allowance legislation increased by 71.4%.[48]

[45] Source: Statista, retrieved from: https://www.statista.com/statistics/1127844/population-share-aged-65-and-older-germany/?utm_source=chatgpt.com, accessed in January 2025.
[46] Source: Statista, Population by Federal State, retrieved from: https://www.statista.com/statistics/1127686/population-by-federal-state-germany/, accessed in January 2025.
[47] Source: Diakonie, retrieved from: https://www.diakonie.at/unsere-angebote-und-einrichtungen/hof-altenberg, accessed in January 2025.
[48] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/presse-2024/mi_statistik-sachsen-127-2024_wohngeldhaushalte_2023.pdf, accessed in January 2025.

Ethnic Minorities

There are four officially recognised national minorities in Germany: the Danes, the Frisians, the German Sinti and Roma, and the Sorbs. [49] However, specific data regarding the presence and distribution of these minorities within the Direct Socioeconomic and Health AoI is not currently available.

Migration, Asylum Seekers and Refugees

By the end of 2022, around 351,000 people from non-EU countries with temporary residence permits for employment were registered in Germany's Central Register of Foreigners (AZR). According to the Federal Statistical Office (Destatis), the number of labour migrants from non-EU countries has steadily increased since 2010, when it was 85,000. In 2020 and 2021, during the pandemic, the increase was modest (2021: +21,000 or +8%; 2020: +16,000 or +6%). However, in 2022, the number of labour migrants rose by 56,000 (19%), likely due to catch-up effects following the lifting of many Covid-19 restrictions.[50]

Many of the foreign nationals living in the Saxon Switzerland-Eastern Ore Mountains district are EU citizens that are economic migrants and have migrated to Germany for employment purposes. These individuals are predominantly from neighbouring countries such as the Czech Republic and Poland or central European countries such as Slovakia[51].

A significant portion of Germany's migrant population consists of refugees and asylum seekers. From January to December 2023, the Federal Office received around 329,000 first-time asylum applications, marking an increase of approximately 51% compared to the previous year. This increase can be attributed to regional conflicts such as the war in Ukraine. Many recognized asylum seekers, including Ukrainians who could immediately rent their own apartments, are unable to find housing, thus occupying shelter spaces longer than necessary.

Initial signs show that the number of arrivals at first reception centres in Saxony has dropped from 800-1,000 per week in August / September to around 200 per week as of January 2024. Several factors contribute to this, such as fewer arrivals via Mediterranean routes in winter, the closure of the Balkan route from Serbia, and the positive effects of border controls, which have significantly reduced human trafficking.

As of January 2024, 12,796 foreign nationals were under the jurisdiction of the Foreigners' Office of the Saxon Switzerland-Eastern Ore Mountains district. This includes 1,000 asylum seekers, 592 rejected or tolerated asylum seekers, and 1,167 recognized asylum seekers. Of the total foreign population, 21.6% have an asylum background.

As of December 2023, the district's asylum accommodation facilities housed 415 displaced persons from Ukraine and 2,117 asylum seekers from more than 30 countries, 565 of whom

[49] Source: Federal ministry of the Interior and Community, National minorities, retrieved fromhttps://www.bmi.bund.de/DE/themen/heimat-integration/gesellschaftlicher-zusammenhalt/minderheiten/minderheiten-in-deutschland/minderheiten-in-deutschland-node.html, accessed in December 2024.
[50] Source: Destatis, retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Population/Migration-Integration/_node.html, accessed in January 2025.
[51] Source: Activity report of the Commissioner for Integration and Migration, Sächsische Schweiz-Osterzgebirge district, retrieved from: https://www.landratsamt-pirna.de/download/Jahresbericht-2023-BIM.pdf, accessed in March 2025.

had already obtained residence permits.[52] Within the Direct AoI, close to the village of Zinnwald and the proposed area for the Project above-ground mine facilities (former border station), there are some buildings used to house refugees (on the western side of the border station). Land is not required by the Project on the western side of the former border station. However, people using these accommodation facilities will be considered as receptors of potential impacts. Further details on these residents will be collected during the ESIA phase, including the number of refugees, their country of origin and demographics as well as their views about the Project.

8.3.2.2 CZECH REPUBLIC

Population Overview

As of June 2024, the Czech Republic had 10.88 million inhabitants, slightly declining from end 2023. The decline was mainly attributed to both natural change and net migration. The number of births decreased, at a similar intensity as the previous two years. A total of 62.7 thousand people immigrated to Czech Republic from abroad in the first half of the year, by 13.8 thousand less year-on-year. The number of emigrants was 70.2 thousand, including 50.5 thousand in March, by 55.2 thousand more than in the first half of 2023.[53]

In terms of gender distribution, within the Czech population, women accounted for 51% of the population. Among foreigners, women represented 49.3% at the end of 2023.[54]

As of end 2022, the Ústecký Region had a total population of 812,337 people, out of whom 50.7% women. The population was mainly urban (78.7%) and had a mean age of 42.6 years. Approximately 15.9% of the population was aged 0-14 years, 63.6% were aged 15 to 64 years and 20.4% were older than 65 years. While women represented fairly half of the population in the age groups 0 to 64 years, they definitely outnumbered men in the 65+ age category (57.8%). As of end 2022, Teplice district had 127,681 inhabitants, out of whom 50.8% were women, similarly to the regional and national gender composition. The age composition was very similar to the one at regional level, with a mean age of 42.6 years and 15.8% of the population aged 0 to 14, 64% aged 15 to 64 years and 20.1% older than 65 years.[55]

Nationality and Ethnicity

As of end 2023, there were 1,06 million registered foreigners in Czech Republic including those with temporary protection, more than half of whom were Ukrainians (574 thousand or 5.2% of the country population). Ukrainians were most predominant overall while Slovaks formed the most predominant group of the EU countries (119 thousand or 1% of the country population). In the Census 2021, 83.8 % of those who filled in the question on nationality declared themselves to be Czech, 5.0 % to Moravian nationality and 0.2 % to Silesian nationality. Of the

[52] Source: Foreigners in the district of Saxon Switzerland-Eastern Ore Mountains. Retrieved from: https://www.landratsamt-pirna.de/download/Jahresbericht-2023-BIM.pdf, accessed in January 2025.
[53] Source: Czech Statistical Office. 2024. Population change - 1st half of 2024. Retrieved from: https://csu.gov.cz/rychle-informace/population-change-2-quarter-of-2024, accessed in March 2025
[54] Source: Czech Statistical Office. 2024. Number of women and men, demografic events. Retrieved from: https://csu.gov.cz/number-of-women-and-men-demografic-events?pocet=10&start=0&skupiny=30&razeni=-datumVydani, accessed in March 2025
[55] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025

other nationalities, Slovak (1.3 %), Ukrainian (1.1 %), and Vietnamese (0.4 %) were the most frequently declared nationalities. [56]

Language

The official language is Czech, which belongs to the Western Slavic family of languages. Moravians and Silesians speak Czech. [57]

Religion

The State is denominationally neutral, which means that there is no official religion. Freedom of religion is granted by the Charter of Fundamental Rights and Freedoms and everybody has the right to express their own religion or belief. In the Census 2021, in response to religious belief, 18.7 % of those who completed the question declared that they believed in God and belonged to a church or religious society. The answer "without religious faith" accounted for more than two-thirds (68.3 %) of the answers. Less than a tenth of the population (9 %) said they believed in God but did not belong to any church or religious society. The Roman Catholic Church (54 % of all believers according to the Census 2021) was the biggest church. The Evangelical Church of the Czech Brethren and the Czechoslovak Hussite Church were the other two most important churches. As of January 2024, there were 44 churches and religious societies registered in the Register of Churches and Religious Communities (according to the Act on Churches and Religious Communities, the condition for registration is a minimum of 300 adult followers).[58]

8.3.3 EDUCATION

8.3.3.1 GERMANY

In Germany, mandatory education requires children to attend school starting at age six, continuing for at least nine years of full-time schooling, yet the nation offers a variety of levels and modes of education throughout people's lifetime. Most students in Germany currently study at public institutions, comprising 85.9% or approximately 2.5 million students in the winter semester 2023/24. Around 13% of students, approximately 373,000, are enrolled in private (state-recognised) universities, while church-run universities account for only 1% of all students during the same period.[59]

Saxony is home to four renowned and historically significant universities in Dresden, Leipzig, Chemnitz, and Freiberg. These institutions offer a broad range of academic programmes,

[56] Source: Eurydice. 2024. Population: demographic situation, languages and religions. Retrieved from: https://eurydice.eacea.ec.europa.eu/national-education-systems/Czech Republic/population-demographic-situation-languages-and-religions, accessed in March 2025
[57] Source: Eurydice. 2024. Population: demographic situation, languages and religions. Retrieved from: https://eurydice.eacea.ec.europa.eu/national-education-systems/Czech Republic/population-demographic-situation-languages-and-religions, accessed in March 2025
[58] Source: Eurydice. 2024. Population: demographic situation, languages and religions. Retrieved from: https://eurydice.eacea.ec.europa.eu/national-education-systems/Czech Republic/population-demographic-situation-languages-and-religions, accessed in March 2025
[59] Source: CHE Hochschuldaten in Germany, retrieved from: https://hochschuldaten.che.de/data-on-higher-education-in-germany/students/#:~:text=Most%20students%20(57.9%25%2C%20around,the%20winter%20semester%202023%2F24, accessed in January 2025.

covering engineering, natural sciences, humanities, social sciences, as well as economics and law.[60]

In the 2023 / 2024 school year, the vocational education system in Saxony consisted of 4,190 students in vocational schools, 2,060 in vocational high schools, 520 in technical colleges, 280 in vocational schools, and 960 in specialised vocational education programmes, with a total of 7,040 students. These numbers represent a stable continuation of previous years, with slight increases in some areas, indicating a steady demand for vocational training and education in the region.[61]

The municipalities of Altenberg, Bad Gottleuba, Liebstadt, and Glashütte are home to both primary and secondary schools as shown in Table 18. Primary schools (Grundschule) cater to children aged 6 to 10, while secondary schools offer more specialised education following primary schooling from the age of 10 to 16.

[60] Source: Saxony.de, retrieved from: https://www.studieren.sachsen.de/vier-universitaten-4236.html, accessed in January 2025.
[61] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/statistisch-betrachtet/rsap_statistik-sachsen_kreis-saechs-schweiz.pdf, accessed in January 2025.

TABLE 18 OVERVIEW OF SCHOOLS AND STUDENTS IN THE DIRECT SOCIOECONOMIC AND HEALTH AOI (AS OF OCTOBER 13, 2022)

Municipality	Primary Schools	Students	Secondary Schools	Students	High schools	Students	Special Needs School	Students
Altenberg	2	289	1	277	-		-	-
Geising	-	-	1	-	-	-	-	-
Lauenstein	1	-	-	-	-	-	-	-
Bad Gottleuba-Berggießhübel	1	144	1	364	-		1	6
Liebstadt	1	123	-	-	-	-	-	-
Glashütte	2	243	-	-	-	-	-	-

Source: Statistik Sachsen, retrieved from: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.statistik.sachsen.de%2Fdownload%2Fregional%2Fstatistik-sachsen_zII1_t04.1-4.2_allgemeinbildende-schulen.xlsx&wdOrigin=BROWSELINK, accessed in January 2025.

The Altenberg Primary School and Lauenstein Primary School collectively serve the municipality of Altenberg, covering the settlements of Fürstenau, Fürstenwalde, Gottgetreu, Liebenau, Löwenhain, Müglitz, Bärenstein, Geising, Lauenstein, Altenberg, Bärenfels, Falkenhain, and Zinnwald-Georgenfeld. The Berggießhübel Primary School is managed by the town of Bad Gottleuba-Berggießhübel and serves the entire town area, including the settlements of Bad Gottleuba, Berggießhübel, and Oelsen.

An estimated 6.2 million adults in Germany struggle significantly with reading and writing, including around 300,000 people in Saxony. Their literacy skills are so limited that they cannot meet the basic requirements of written language or apply it in daily life.[62]

Compulsory education in Saxony starts at the age of six and continues for at least nine years. For children and youth aged 7 to 15 years, education participation rates reach nearly 100%, ensuring that almost all children are engaged in formal schooling during these crucial developmental years. Until the age of 10, most children attend primary schools or special schools, where they are prepared for their subsequent educational paths.

For students aged 11 to 15, 55% attend Oberschulen, which focus on both vocational and academic preparation, while 39% are enrolled in Gymnasien, which provide a more academic-oriented curriculum. Additionally, around 6% of children in this age group attend Förderschulen, which cater to students with special educational needs.

Saxony's strong emphasis on early education and nearly universal school attendance suggests that literacy levels in the region are likely very high. The structured progression through daycare, primary schools, and secondary education ensures that almost all children develop essential reading and writing skills.[63]

Agricultural enterprises across the Saxon Switzerland-Eastern Ore Mountains district have also developed a collaborative training network to organise apprenticeships in professions such as farmer, livestock manager, and agricultural service specialist. This partnership enables apprentices to gain a wide range of skills and practical experiences through shared training programmes, coordinated by a dedicated trainer, and rotations between partner enterprises. These initiatives enhance vocational education in the district, fostering expertise in agricultural professions.[64]

In the Direct Socioeconomic and Health AoI, there are various job opportunities in the mining sector, such as positions for mine guides at local historical mining sites. However, there are no specific schools dedicated to mining education within the immediate area. The nearest institution offering relevant vocational training is the Technical University of Freiberg (TU Freiberg), which provides specialised programmes related to mining and geosciences.

Educational levels within the Direct Socioeconomic and Health AoI will be further detailed during the ESIA phase.

[62] Source: Saxony.de, retrieved from: https://www.medienservice.sachsen.de/medien/news/1068333, accessed in January 2025.
[63] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/statistisch-betrachtet/broschur_statistik-sachsen_statistisch-betrachtet_bildung.pdf, accessed in January 2025.
[64] Abv-osterzgebirge.de, retrieved from: https://www.abv-osterzgebirge.de/, accessed in January 2025.

8.3.3.2 CZECH REPUBLIC

Considering the geopolitical context and the armed conflict in Ukraine, schools in Cezchia were faced with the need to ensure basic education to an increased number of pupils in school age (6-14 years), especially in Prague and other large cities and their hinterland, which have dealt with the issue of insufficient capacity of basic schools in the long term. Pupils-foreigners have become the fastest-growing group of pupils in basic schools; i. e. pupils whose first language is different from the official language or the language of instruction of the destination country ('pupils with a different first language'). In Czech Republic, this group of pupils is formed mostly by Slovaks, Vietnamese, Russians, and Ukrainians. In the school year 2021/2022, pupils with a different first language in basic schools formed 3 %, in 2022/2023 it was 7 %. The increase reflects primarily the growth of the proportion of Ukrainian pupils in the total number of pupils with a different first language. In April 2024, there were more than 37,000 Ukrainian pupils registered at Czech basic schools, which is an increase of approximately 10,000 compared to the previous year. Geographically, the highest numbers are at schools in Prague and the Central Bohemian Region. Nevertheless, Ústecký Region ranks second after Prague in terms of numbers of nursery schools educating Ukrainian Ukrainian children.[65]

Within the Ústecký Region, in 2022, the educational attainment of the population aged 15+ years was as follows: 18% had none and primary education, 36.5% had secondary education without examination, 32.8% had secondary education with examination and only 12.2% had higher education. More women than men had none and primary education as well as higher education.[66]

The network of educational establishments in the Ústecký Region comprises 359 nursery schools, 284 basic schools, 95 secondary technical schools and grammar schools. Two universities provide higher education in the Region: the Jan Evangelista Purkyně University in Ústí nad Labem and the College of Applied Psychology in Terezín.[67]

8.3.4 ECONOMY AND EMPLOYMENT

8.3.4.1 ECONOMY

Germany

Germany has a highly developed social market economy, driven by a combination of industrial production, technological innovation, and a strong service sector. In 2023, Germany's gross domestic product (GDP) was approximately €4.18 trillion, making it the largest economy in Europe. This figure is significantly (15%) above the EU average GDP per capita of €37,600, with Germany's GDP per capita at €43,400.[68&69] In terms of inflation, Germany's annual

[65] Source: Eurydice. 2024. Population: demographic situation, languages and religions. Retrieved from: https://eurydice.eacea.ec.europa.eu/national-education-systems/Czech Republic/population-demographic-situation-languages-and-religions, accessed in March 2025
[66] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region – 2023, retrieved from: https://csu.gov.cz/docs/107508/ac9877eb-e01f-98a4-bb7c-9e75d35ea537/330085230902.xlsx?version=1.0, accessed in March 2025.
[67] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025
[68] Statista, retrieved from: https://www.statista.com/statistics/685925/gdp-of-european-countries/?utm_source=chatgpt.com, accessed in January 2025.
[69] Source: EU Union, retrieved from: https://european-union.europa.eu/principles-countries-history/eu-countries/germany_en?utm_source=chatgpt.com, accessed in January 2025.

average rate in 2024 was 2.2%, slightly below the EU average of 2.4%.[70&71] This indicates that Germany's inflation rate is relatively stable and comparable to the broader European context. Regarding foreign trade, Germany is a global leader in exports, particularly in machinery, vehicles, and chemical products. In November 2024, Germany's exports to EU countries totalled €67.8 billion, while imports from the EU amounted to €55 billion, with a decline in both exports and imports compared to October. Meanwhile, trade with non-EU countries showed an increase in exports to €59.5 billion, primarily driven by a 14.5% rise in exports to the United States, while imports from China were the highest, totalling €13.4 billion.[72] In Germany, businesses are subject to a corporate income tax rate of 15%, with an additional 5.5% solidarity surcharge, resulting in a combined rate of 15.825%.[73]

Germany's Human Development Index (HDI) has shown consistent improvement over the years. According to the United Nations Development Program's Human Development Report 2023-24, Germany achieved an HDI score of 0.950 in 2022, placing it among the top nations globally.[74]

Saxony, as a modern and internationally competitive investment location, contributes significantly to Germany's economic strength. In 2023, Saxony's GDP reached €155.98 billion, marking a 6.7% increase compared to €146.25 billion in 2022.[75] Its economy is diverse, with key sectors driving growth and innovation. The primary sector includes agriculture and mining, though these contribute a smaller portion to the GDP. The secondary sector is the automotive industry which is among the most powerful industries in the region, supported by a strong network of suppliers and research institutions. Notable tertiary sectors include mechanical engineering, microelectronics, and renewable energy technologies, which further solidify Saxony's position as an economic hub in eastern Germany. [76]

Between 2022 and 2023, Saxony's GDP contracted by 0.6% in real terms, a decline attributed to elevated energy costs, inflation, rising interest rates, and the ongoing challenges of economic transformation. This decline is attributed to a complex interplay of factors, including uncertainties stemming from global crises, the ongoing challenges of economic transformation, elevated energy costs, inflation, and rising interest rates, all of which are straining the region's economic framework.[77]

[70] Statistisches Bundesamt, retrieved from: https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/_node.html?utm_source=chatgpt.com, accessed in January 2025.
[71] Source: Eu Commission, retrieved from: https://ec.europa.eu/eurostat/web/products-euro-indicators/w/2-17012025-ap?utm_source=chatgpt.com, accessed in January 2025.
[72] Source: Destatis, retrieved from: https://www.destatis.de/EN/Press/2025/01/PE25_006_51.html, accessed in January 2025.
[73] Source: Tax summaries, PWC, retrieved from: https://taxsummaries.pwc.com/germany/corporate/taxes-on-corporate-income?utm_source=chatgpt.com, accessed in January 2025.
[74] Source: HDI, retrieved from: https://hdr.undp.org/data-center/specific-country-data#/countries/DEU, accessed in January 2025.
[75] Source: IFO ECONOMIC Forecast for Eastern Germany and Saxony, retrieved from: https://www.ifo.de/en/press-release/2023-07-05/ifo-economic-forecast-eastern-germany-and-saxony-summer-2023?utm_source=chatgpt.com, accessed in January 2025.
[76] Source: Economy in Saxony. Retrieved from: https://www.wirtschaft.sachsen.de/, accessed in January 2025.
[77] Source: Silicon Saxony. Retrieved from: https://silicon-saxony.de/en/smwa-saxony-has-the-highest-job-density-of-the-eastern-german-states/. Accessed in January 2025.

The region's mining history has significantly shaped its culture and economy, particularly within the Saxon Switzerland-Eastern Ore Mountains District where mining activities date back centuries. While large-scale mining was primarily concentrated outside the Direct Socioeconomic and Health AoI, its legacy is still evident in local traditions, such as mining parades and festivals. Key attractions within the Direct AoI include the Marie Louise Stolln in Berggießhübel and another in Zinnwald, both offering guided tours of historic tunnels and traditional ore extraction methods, showcasing the region's rich mining heritage. Over time, while agriculture still plays a role in the rural economy, the region has shifted towards services, especially winter tourism, which has become a major economic driver, alongside traditional crafts and small industries such as companies for sanitation, solar installation or woodworking.

The economic focus of Bad Gottleuba-Berggießhübel and its surroundings lies in health tourism and spa services, a sector also central to Altenberg's economy. Berggießhübel hosts medium-sized manufacturing businesses, especially in mechanical engineering, medical technology, and plastics.

In Altenberg, smaller industrial units are concentrated within the city, including businesses such as construction and craft companies, as well as firms specialising in heating, sanitation, roofing, and solar installations, as well as woodworking[78]. These industries support local employment and contribute to the region's economy, particularly in the areas of construction and skilled trades.

In the nearby town of Geising, key employers include FeinwerkTechnik GmbH, which, with 80 employees, is one of the main employers in the Altenberg region. Additionally, businesses like Schneiderei Geising (a tailoring business) further support the local workforce. These companies play a crucial role in the socioeconomic landscape of the area, providing essential services and fostering economic stability in both Altenberg and Geising.

The Altenberg region in the Ore Mountains offers a variety of leisure activities, including skiing, exploring nature, engaging in sports, and learning about mining traditions. Altenberg, along with its districts—Oberbärenburg, Schellerhau, Zinnwald-Georgenfeld, and Geising—are recognised as "state-approved spa resorts" in the Eastern Ore Mountains, attracting visitors to their spas and natural attractions[79]. In winter, Altenberg is considered one of the winter sports centres in the Ore Mountains, regularly hosting major international events such as the Bob and Skeleton World Cup, the Junior World Championships, and the Bob European Cup. [80] [81]

Czech Republic

The Czech economy grew by 2.1% year-on-year (vs. 2.0%) in Q3 2024. Economic activity was boosted most by the trade, transportation, accommodation and food services and manufacturing sectors. In 2025, economic growth is expected to be boosted mainly by

[78] In German *Tischlerei*.
[79] Source: Altenberg/de. Retrieved from: https://www.altenberg.de/de/. Accessed in January 2025.
[80] Source: Dampfbahn Route. Retrieved from: https://www.dampfbahn-route.de/de/saechsische-schweiz_osterzgebirge/275/Luftkurort_Altenberg.html#:~:text=International%20bekannt%20ist%20Altenberg%20durch,%26%20und%20Skeleton%2DWeltmeisterschaft%20statt. Accessed in January 2025.
[81] Source: Sächsische.de, retrieved from: https://www.saechsische.de/sport/termine-fuer-die-weltcups-im-eiskanal-anfang-und-ende-in-altenberg-AN253WGE32MMI2GDFBGPTNSNWI.html, accessed in January 2025.

household consumption and investment spending, and GDP could be 2.3% higher Year on Year.[82]

In 2023, GDP per capita in exchange rate terms in the Czech Republic rose to EUR 29,200, equivalent to 70% of the euro area average. In 2024, the relative economic level of the Czech Republic against the euro area was similar to the 2023 level. [83]The average inflation rate in 2024 was 2.4%. Inflationary pressures were significantly lower last year than in the previous two years. [84] The Czech economy is highly dependent on manufacturing and exports. In 2023, the share of agriculture in the Czech Republic's GDP was 1.73%, industry contributed approximately 30.42% and the services sector contributed about 59.67%[85]. The Czech Republic's HDI has shown consistent improvement over the years. According to the United Nations Development Program's Human Development Report 2023-24, the Czech Republic achieved an HDI score of 0.895 in 2022.[86]As of end 2022, the Ústecký Region's gross domestic product accounted for 5.3% of the national GDP; converted to GDP per capita, it amounted to 69.4% of the national average and ranked 13th in the country.[87] The Cinovec lithium-tin deposit is located in the Krusne Hory Mountains, forming a natural border between the Czech Republic and Germany. The project is situated in a historic mining region, with artisanal mining dating back to the 1300s.[88&89]

8.3.4.2 EMPLOYMENT

Germany

Germany has a 77.57% employment rate (approximately 46.1 million people). As of November 2024, the adjusted unemployment rate[90] is 3.4% (1.49 million people) which represents an increase of 138,000, or 10.1%, compared with November 2023.[91] Germany's youth unemployment[92] is the lowest in the EU.

[82] Source: Ministry of Finance of the Czech Republic. 2025. Macroeconomic Forecast – January 2025. Retrieved from: https://www.mfcr.cz/en/fiscal-policy/macroeconomic-analysis/macroeconomic-forecast/2025/macroeconomic-forecast-january-2025-58626, accessed in March 2025.
[83] Source: Ministry of Finance of the Czech Republic. 2025. Macroeconomic Forecast – January 2025. Retrieved from: https://www.mfcr.cz/en/fiscal-policy/macroeconomic-analysis/macroeconomic-forecast/2025/macroeconomic-forecast-january-2025-58626, accessed in March 2025.
[84] Source: Ministry of Finance of the Czech Republic. 2025. Macroeconomic Forecast – January 2025. Retrieved from: https://www.mfcr.cz/en/fiscal-policy/macroeconomic-analysis/macroeconomic-forecast/2025/macroeconomic-forecast-january-2025-58626, accessed in March 2025.
[85] Source: Statistic, retrieved from: Czechia: share of economic sectors in the gross domestic product 2023 | Statista, accessed March 2025
[86] Source: HDI, retrieved from: https://hdr.undp.org/data-center/specific-country-data#/countries/DEU, accessed in January 2025.
[87] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025
[88] Source: European Metals, retrieved from: Cinovec Project Overview • European Metals, accessed in March 2025
[89] Source: Mining Technology, retrieved from: Cinovec Lithium and Tin Project, Czech Republic, accessed in March 2025
[90] Adjusted unemployment rate refers to adjustments made to the figure regarding seasonal data and irregular effects.
[91] Source: DEStatis, Statistiches Bundesamt, Press Release: Employment increased in November 2024 compared with previous year November 2023, retrieved from, https://www.destatis.de/EN/Themes/Labour/Labour-Market/Employment/_node.html, accessed in January 2025.
[92] Youth unemployment refers to the percentage of individuals aged 15–24 who are actively seeking but unable to find work, excluding those in education or not seeking employment.

Based on the official labour force participation statistics, men are employed at a higher rate than women in Germany for each age group. The employment rate for men is 65.0% compared to 55.2% for women.[93]

With 508 employed individuals per 1,000 residents, Saxony has the highest job density among the eastern German states. The unemployment rate in Saxony has dropped significantly, from 11.8% in 2010 to 6.5% in November 2024, narrowing the gap with the national average of 5.9% to just 0.6%. Notably, this marks the thirteenth consecutive year that Saxony's unemployment rate has remained below the European average.[94] [95]

The number of employed individuals in the Saxon Switzerland-Eastern Ore Mountains District has remained stable over the years, with minor fluctuations, reaching 2,074,000 employed persons in 2023, reflecting a 0.2% increase compared to the previous year. The latest data for the first quarter of 2024 shows a slightly lower figure of 2,065,100 employed individuals.[96]. The development of employment subject to social insurance contributions varies across industries. From June 2023 to June 2024, significant employment growth occurred in sectors such as real estate and professional / scientific services (+2,100), residential care and social work (+1,700), and healthcare (+1,300). However, notable declines were observed in manufacturing (-6,500), temporary employment (-3,600), and construction (-2,400).[97] The labor market as of December 2024, in the Saxon Switzerland-Eastern Ore Mountains shows signs of strain, with rising unemployment and underemployment rates. The total number of unemployed individuals increased to 6,727, pushing the unemployment rate to 5.3% (+0.2% compared to the previous year). Job vacancies have seen a sharp decline, with only 1,471 positions advertised in December 2024, a drop of 487 from the previous year.[98]

In 2022[99], the municipality of Bad Gottleuba-Berggießhübel displayed a relatively stable employment landscape, with an unemployment rate of 3.0% among residents aged 15-64, lower than the district average of 4.2% and Saxony's 4.8%. Long-term unemployment affected 43.0% of all unemployed individuals in the municipality. There is 46.8% of the working-age population which is socially insured. Employment was predominantly concentrated in the tertiary sector (54.0%), followed by the secondary sector (34.9%) and the primary sector (1.9%). Women made up 55.3% of the workforce, and 16.0% of employees held academic degrees. Commuting played a significant role, with 74.8% of workers commuting to jobs outside the municipality and 66.9% commuting across the broader region. These figures

[93] Source: DEStatis, Statistiches Bundesamt, Labor Force Participation, https://www.destatis.de/EN/Themes/Labour/Labour-Market/Employment/Tables/et-etq-2021.html, accessed in January 2025.
[94] Source: Statista. Retrieved from: https://www.statista.com/statistics/1467048/unemployment-rate-federal-states-germany/?utm_source, accessed in January 2025.
[95] Source: Silicon Saxony. Retrieved from: https://silicon-saxony.de/en/smwa-saxony-has-the-highest-job-density-of-the-eastern-german-states/. Accessed in January 2025.
[96] Source: Saxony Statistic, retrieved from: https://www.statistik.sachsen.de/html/erwerbstaetige.html, accessed in January 2025.
[97] Source: Bundesagentur für Arbeit, retrieved from: https://www.arbeitsagentur.de/vor-ort/rd-sachsen/presse/2024-34-der-sachsische-arbeitsmarkt-im-august-2024, accessed in January 2025.
[98] Source: Bundesagentur für Arbeit: Retrieved from: https://statistik.arbeitsagentur.de/Auswahl/raeumlicher-Geltungsbereich/Politische-Gebietsstruktur/Kreise/Sachsen/14628-Saechsische-Schweiz-Ostergebirge.html. Accessed in January 2025.
[99] Level of data available only until 2022.

reflect a labour market heavily reliant on the service sector, nearby employment centres, and a workforce with notable gender and educational diversity.[100]

In Altenberg, the unemployment rate in 2022 was 4.0%, slightly below the regional average of 4.2% and comparable to the Saxony-wide average of 4.8%. Long-term unemployment affected 34.0% of unemployed individuals, and among these, 58.7% commuted to work outside the municipality, reflecting a strong reliance on nearby employment centres. Women made up 68.6% of the employed in the same age group, and 65.5% of employees had a secondary school diploma compared to 9.6% with an academic degree and 17.6% with a higher education entrance qualification. Meanwhile, 3.9% of the workforce was in vocational training, and 5.0% were working secondary jobs. Additionally, 64.2% of individuals aged 55-64 were employed, underscoring a robust engagement of older workers in the labour market. However, 26.6% of the working-age population was neither employed with social insurance nor unemployed, indicating other forms of economic activity or inactivity.[101]

In Liebstadt, the unemployment rate in 2022 was notably low at 2.3%, significantly below the district average of 4.2% and the Saxony-wide average of 4.8%. Long-term unemployment affected 31.3% of unemployed individuals, lower than both the district (36.6%) and state (38.7%) averages. A high proportion of the working-age population (71.7%) was employed including social insurance, surpassing both district and state averages. However, Liebstadt's workforce was highly dependent on external employment opportunities, as 89.7% of workers commuted outside the municipality. Among the employed, 71.1% of women aged 15-64 held jobs with social insurance, and 63.6% of the workforce had a secondary school diploma. Employees with an academic degree accounted for 11.0%, while those with a higher education entrance qualification comprised 17.0%. Only 3.0% of the workforce was in vocational training, and 5.2% worked secondary jobs. Additionally, 65.9% of individuals aged 55-64 were employed, reflecting a strong labour market engagement among older workers. Meanwhile, 26.1% of the working-age population was neither unemployed nor employed with social insurance contributions.[102]

In Glashütte, the unemployment rate for 2022 was 2.5%, slightly below the district average of 4.2% and the Saxony-wide average of 4.8%. Long-term unemployment affected 29.9% of all unemployed individuals, lower than the regional (36.6%) and state (38.7%) averages. A strong 76.3% of the working-age population was employed with social insurance contributions which include forms of health insurance or forms of pension insurance, exceeding both district and state averages. The proportion of workers commuting outside Glashütte for employment was significant, with 69.7% of the employed population relying on external job opportunities. Among the employed, 77.8% of women aged 15-64 were in jobs with social insurance, and 65.8% of workers had a secondary school diploma. Those with an academic qualification accounted for 10.8% of the workforce, while 19.4% had a higher education entrance qualification. Additionally, 5.2% of the workforce was in vocational training, and 5.1% worked

[100] Source: Statistic for Saxony, Bad Gottleuba-Berggiesshübel. Retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_bad-gottleuba-berggiesshuebel-stadt-14628020.pdf, accessed in January 2025.
[101] Source: Statistic Saxony Altenberg. Retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_altenberg-stadt-14628010.pdf, accessed in January 2025.
[102] Source: Statistic Saxony Liebstadt, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_liebstadt-stadt-14628230.pdf, accessed in January 2025.

secondary jobs. The older workforce (aged 55-64) was also significantly engaged, with 70.2% of individuals in this age group employed. Meanwhile, 21.2% of the working-age population was neither unemployed nor employed with social insurance contributions.[103]

Czech Republic

The number of registered unemployed exceeded the number of job vacancies in Q4 2024. Moreover, not all vacancies could be considered active. The unemployment rate averaged 2.6% Q3 2024. The participation rate (20–64 years) increased by 0.4 pp YoY to 84.4% in Q3 2024 (vs. 84.5%). Growth was driven by the working-age labour force, which outpaced population growth. [104]

Despite some easing of the tight labour market, many sectors and occupations continued to experience a noticeable shortage of workers, particularly in the construction sector and in the industry. This is mitigated by refugees from Ukraine. [105]

As of end 2022, the most important employers of the Ústecký Region included Severočeské doly a.s. (coal mining companies), ČEZ Distribuce, a.s., ORLEN Unipetrol RPA s.r.o. and Krajská zdravotní, a.s., which has associated the following hospitals since 2007: the hospital in Děčín, Masaryk's hospital in Ústí nad Labem, the hospital in Teplice, the hospital in Most, and the hospital in Chomutov. [106]

At the same time, there were approximately 378 thousand employed persons in the Region most of whom worked in the processing industry (101 thousand persons). Decrease in coal mining, restructuring of enterprises, slowing down of productions and agriculture entailed that, in the national comparison, Ústecký Region has had one of the highest shares of unemployed persons for a long time (5.54% compared to 3.72% in the country as of end 2022). [107]

8.3.4.3 WAGES AND INCOME

In 2022, over 17.3 million people in Germany were affected by poverty: 14.4% of the population were at risk of poverty, 6.1% were affected by severe material and social deprivation, and 9.7% were living in a household with very low work intensity.[108]

The EU defines poverty risk based on relative income levels, considering individuals at risk if their net equivalised income is below 60% of the national median. In 2023, this threshold in

[103] Source: Statistic Saxony Glashütte, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_glashuette-stadt-14628130.pdf, accessed in January 2025.
[104] Source: Ministry of Finance of the Czech Republic. 2025. Macroeconomic Forecast – January 2025. Retrieved from: https://www.mfcr.cz/en/fiscal-policy/macroeconomic-analysis/macroeconomic-forecast/2025/macroeconomic-forecast-january-2025-58626, accessed in March 2025.
[105] Source: Ministry of Finance of the Czech Republic. 2025. Macroeconomic Forecast – January 2025. Retrieved from: https://www.mfcr.cz/en/fiscal-policy/macroeconomic-analysis/macroeconomic-forecast/2025/macroeconomic-forecast-january-2025-58626, accessed in March 2025.
[106] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025
[107] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025
[108] Source: Destatis.de. Retrieved from: https://www.destatis.de/EN/Press/2023/05/PE23_190_63.html#:~:text=190%20of%2016%20May%2023&text=WIESBADEN%20%E2%80%93%20Just%20over%2017.3%20million,conditions%20(EU%2DSILC). Accessed in January 2025.

Germany was €1,314 monthly for single households, with 14.4% of the population living below this level, a decline from 16% in 2021. Young adults aged 18-24 faced the highest risk (24.6%), while those aged 25-54 had the lowest (11.5%). Households with very low work intensity (less than 20%) saw a poverty risk rate of 52.5%, underlining the critical link between employment and poverty mitigation.[109]

In 2023, Saxony's overall poverty risk rate was 13.2%, with young adults aged 18 to under 25 facing the highest risk at 28.4%. The poverty threshold, based on the state median income, was €1,141 monthly for single-person households and €2,397 for families with two adults and two children under 14, both reflecting a 6.3% increase from the previous year.[110]

There is no available or official data on the poverty percentages for the municipalities within the Saxon Switzerland-Eastern Ore Mountains District included in the Direct Socioeconomic and Health AoI. Gender pay disparities persist, with women earning about 18% less per hour than men on average in 2023. The gap is notably larger in western Germany (19%) than in the eastern states (7%)[111]. However, progress has been made, as the pay gap has decreased since 2016, with a government goal of reducing it to 10% by 2030.

In Germany, the minimum wage is defined at the federal level, not by state or specific industry sectors. As of January 1, 2024, Germany's federal minimum wage has been increased to €12.50 per hour. This applies across all sectors, including mining. Like previous years, this minimum wage is a nationwide standard and does not vary by state or industry sector.[112]

Employees in the mining sector in Germany earn an average of €62,370 annually, which corresponds to a monthly gross salary of €5,198. Salaries for skilled workers in the mining sector range between €56,526 and €66,179. With Germany's federal minimum wage set at €12.50 per hour as of January 1, 2024, the average mining salary is approximately 4.16 times higher than the minimum wage.[113]

8.3.4.4 KEY ECONOMIC SECTORS

Germany

Saxony is recognised as "Silicon Saxony," Europe's largest microelectronics and Information and Communication Technology (ICT) cluster, and the fifth largest globally. The pharmaceutical industry in Saxony is also a key player, with a dynamic life-science sector that contributes significantly to Germany’s overall economy.[114]

[109] Source: Social Report 2024: A data report for Germany. Retrieved from: https://www.bpb.de/system/files/dokument_pdf/Sozialbericht_2024_bf_k2.pdf. Accessed in January 2025.
[110] Source: Statistic Saxony. Retrieved from: https://www.statistik.sachsen.de/html/lebensbedingungen-armutsgefaehrdung.html?_cp=%7B%22accordion-content-8636%22%3A%7B%221%22%3Atrue%7D%2C%22previousOpen%22%3A%7B%22group%22%3A%22accordion-content-8636%22%2C%22idx%22%3A1%7D%7D. Accessed in January 2025.
[111] Source: DEStatis, Statistiches Bundesamt, Quality of employment: Gender Pay Gap, retrieved from, https://www.destatis.de/EN/Themes/Labour/Labour-Market/Quality-Employment/Dimension1/1_5_GenderPayGap.html, accessed in January 2025.
[112] Source: DGB, retrieved from: https://www.dgb.de/service/ratgeber/mindestlohn/#:~:text=Mindestlohn%202025%3A%20Warum%20er%20deutlich,2024%20waren%20es%2012.41%20Euro.), accessed in January 2025.
[113] Source: Jobvector, retrieved from: Gehalt im Bereich Bergbau 2025 – jobvector, accessed in January 2025.
[114] Source: Economy in Saxony. Retrieved from: https://www.wirtschaft.sachsen.de/, accessed in January 2025.

Key economic sectors in Saxony include:

- Industry:
  - Automotive Industry (including vehicle and engine manufacturing);
  - Microelectronics and ICT (especially through "Silicon Saxony");
  - Pharmaceuticals (with a focus on life sciences);
  - Mechanical and Electrical Engineering; and
  - Mining (an important sector, especially in regions with natural resources).
- Agriculture (plays a key economic role, particularly in rural areas)
- Services:
  - Logistics and Transport (especially due to the DHL hub in Leipzig).

These sectors drive regional economic growth and support livelihoods by creating employment opportunities and fostering skills development. Saxony's economy is currently navigating a difficult phase within the broader economic challenges facing Germany.

Key economic sectors in the Eastern Ore Mountains District include:[115]

- Manufacturing: The district has a strong manufacturing base, particularly in metalworking and electrical industries;
- Tourism: The district's natural beauty includes the Saxon Switzerland National Park; and
- Agriculture: Agriculture remains vital, especially in rural areas.

In Saxony, livelihoods are supported by a diverse range of economic activities, including industrial sectors such as microelectronics, automotive, and pharmaceuticals, as well as agriculture, horticulture, and viticulture. To strengthen the competitiveness of Saxon agricultural, horticultural, and viticultural enterprises, the state provides investment support, enhancing economic resilience in rural areas. [116]

Czech Republic

The Ústecký Region is varied in what regards natural conditions, economic structure, density of settlement, and condition of the environment. Historically, the economic importance of the region is based on a considerable amount of its raw materials, especially large deposits of brown coal, which lie close to the surface. The brown coal basin stretches under the hillsides of the Ore Mountains from the city of Ústí and Labem to Kadaň. There are also other important raw materials, which are mined in the region, e.g. glass and foundry sands of good quality and a building stone. Four distinct areas can be defined in the region that differ much one from another. It is an area with highly developed industrial production, which is concentrated primarily in the foothills of the Ore Mountains (in the Chomutov District, the Most District, the Teplice District, and partially also the Ústí nad Labem District). As for industries, an important position belongs to the energy industry, coal mining, mechanical engineering, chemical industry, and glass industry. Other important areas are around the towns of Litoměřice and Louny, which are known for their production of hops and vegetables. Areas along the Labe

[115] Landratsamt Pirna, retrieved from: https://www.landratsamt-pirna.de/stabsstelle-wirtschaftsfoerderung.html, accessed in January 2025.
[116] Source: Investments in agricultural holdings, including horticulture and viticulture. Retrieved from: Teil C I. Investitionen in landwirtschaftliche Betriebe einschließlich des Garten- und Weinbaus - Förderportal - sachsen.de, accessed in January 2025.

River and the Ohře River are well-known fruit-growing regions while grapes are grown in the Litoměřice area. The area around the town of Most has also recently become a known wine-growing region, in which vine is grown mainly on lands that were reclaimed after brown coal mining. The Ore Mountains area is a mountain range with sparse population and limited economic activities. [117]

8.3.4.5 LIVELIHOODS WITHIN THE DIRECT SOCIOECONOMIC AND HEALTH AOI

Agricultural zones within the Direct Socioeconomic and Health AoI, particularly around settlements like Breitenau, Hennersbach, Börnersdorf, Oelsen, Geising, and Liebenau play a significant role in the local economy. These predominantly rural areas have economies centred around agriculture, small-scale manufacturing, and local services. Agriculture, particularly farming and livestock production (including dairy farming), is a key livelihood in these municipalities, providing employment and contributing to the region's economic resilience. Agricultural production is recognised as a crucial provisioning service within this area, emphasising its importance to the livelihoods of residents, with local farms producing a wide range of crops, livestock, and traditional goods such as feed and milk, particularly in rural areas like Liebenau. These farms emphasise sustainability and integrated farming practices.

In addition to agriculture, small-scale manufacturing enterprises, including workshops and craft businesses, contribute specialised products and services. Local services, such as retail shops, restaurants, and other small businesses, are crucial in meeting the daily needs of both residents and visitors, helping to sustain the local economy and quality of life.[118]

The local economy is further supported by tourism, with visitors attracted by the scenic rural landscapes and recreational opportunities available in the region. These sectors together help ensure the economic stability of these municipalities, providing livelihoods for local populations and fostering community well-being.

8.3.5 LAND TENURE AND USE

8.3.5.1 LAND TENURE

There is no nationwide land registry in Germany, but there are smaller land registries for specific administrative areas, such as cities and municipalities. Changes to land rights only take effect after being officially registered in the land registry (some exceptions do apply depending on the situation and location). [119]

The planned options involve areas designated as priority zones for agriculture and nature conservation, and they conflict with legal regulations. Further review procedures are necessary to assess feasibility and explore potential compromises, particularly regarding the protection of nature and agricultural interests.

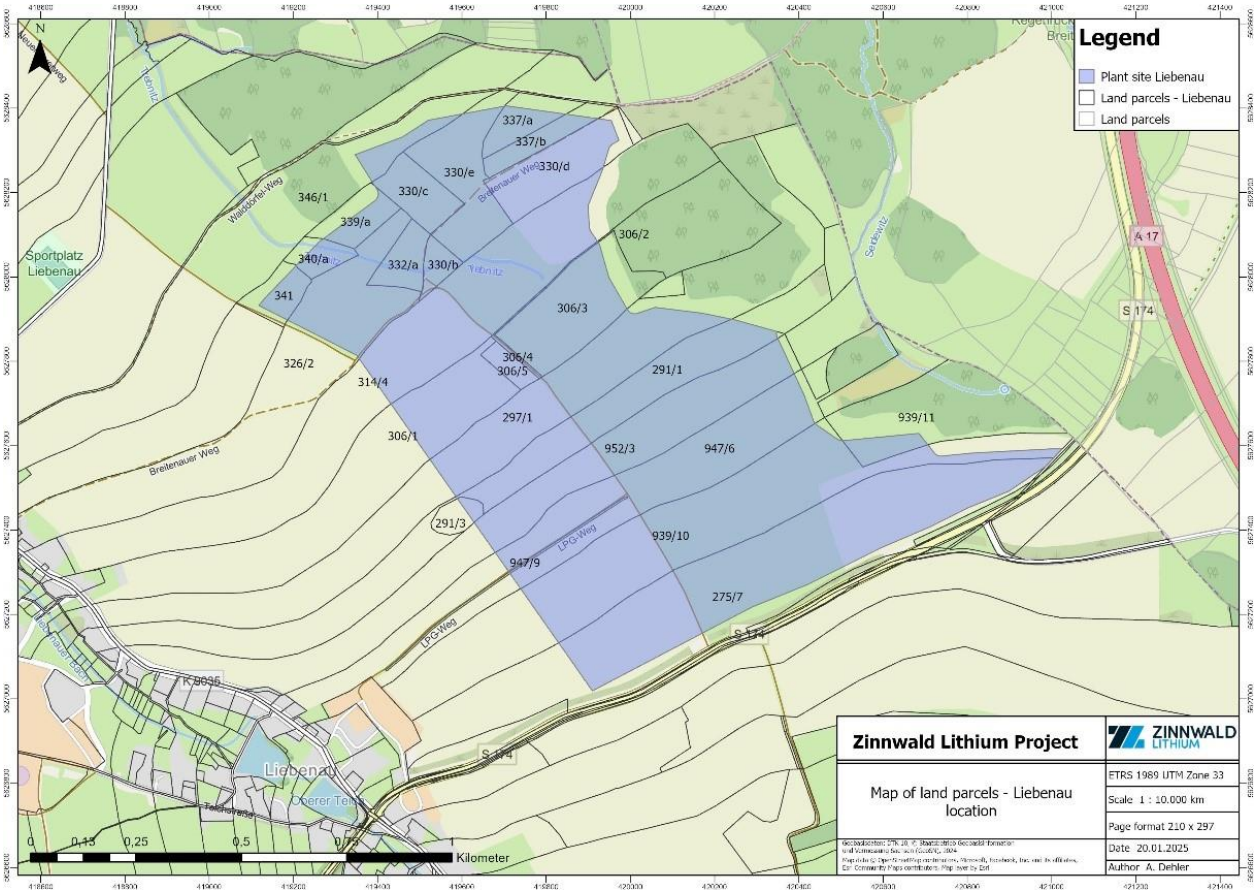
The Project will require land for above-ground facilities, including the former border station for mine access, ventilation shafts, and the TSF and processing plant site. Land acquisition is set

[117] Source: Czech Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025
[118] Source: Liebenauer Agrar GmbH, retrieved from: https://www.liebenauer-agrar-gmbh.de/, accessed in January 2025.
[119] Source: German Probate and Estate Planning Lawyers, Land Registry (Grundbuch), retrieved from: https://www.german-probate-lawyer.com/en/glossary/def/land-registry-germany.html, accessed in January 2025.

to begin in early 2025, with a timeline of 12–18 months. The Client aims to acquire land voluntarily, ensuring no households are physically displaced. Compulsory acquisition will only be considered as a last resort. This approach aligns with stakeholder feedback and international standards (e.g., IFC Performance Standard 5, EBRD ESR 5). A Land Access, Acquisition, and Compensation Framework (LAACF) has been developed and outlines the process, ensuring compensation at (or above) full replacement value for affected landowners and users.

The land necessary for the construction of the beneficiation and processing plants, as well as the TSF and other related infrastructure, has been identified near the village of Liebenau, covering an area of approximately 110 ha - see Figure 7. This is an agricultural land area that is currently owned by around 17 owners /parties (16 private parties and one public party), with a total of 25 affected individual land plots. Around one third of the 110 ha of land is owned by individuals, 55% by partnerships of two or more individuals (some of them are thought to be family members), 6% by a state-owned company and 3% by other companies. The land is currently leased to a local agricultural co-operative and is used for cultivating fodder crops for cattle, with no residential structures or buildings present. The site selection process has ensured that no forest land needs to be cleared and no households or structures will be physically displaced. However, economic displacement will still occur considering the land to be acquired for the Project is currently in use for agricultural purposes. Those who are reliant on this land as a source of income (as landowners and land users) may experience livelihood impacts as a result of the land acquisition process.

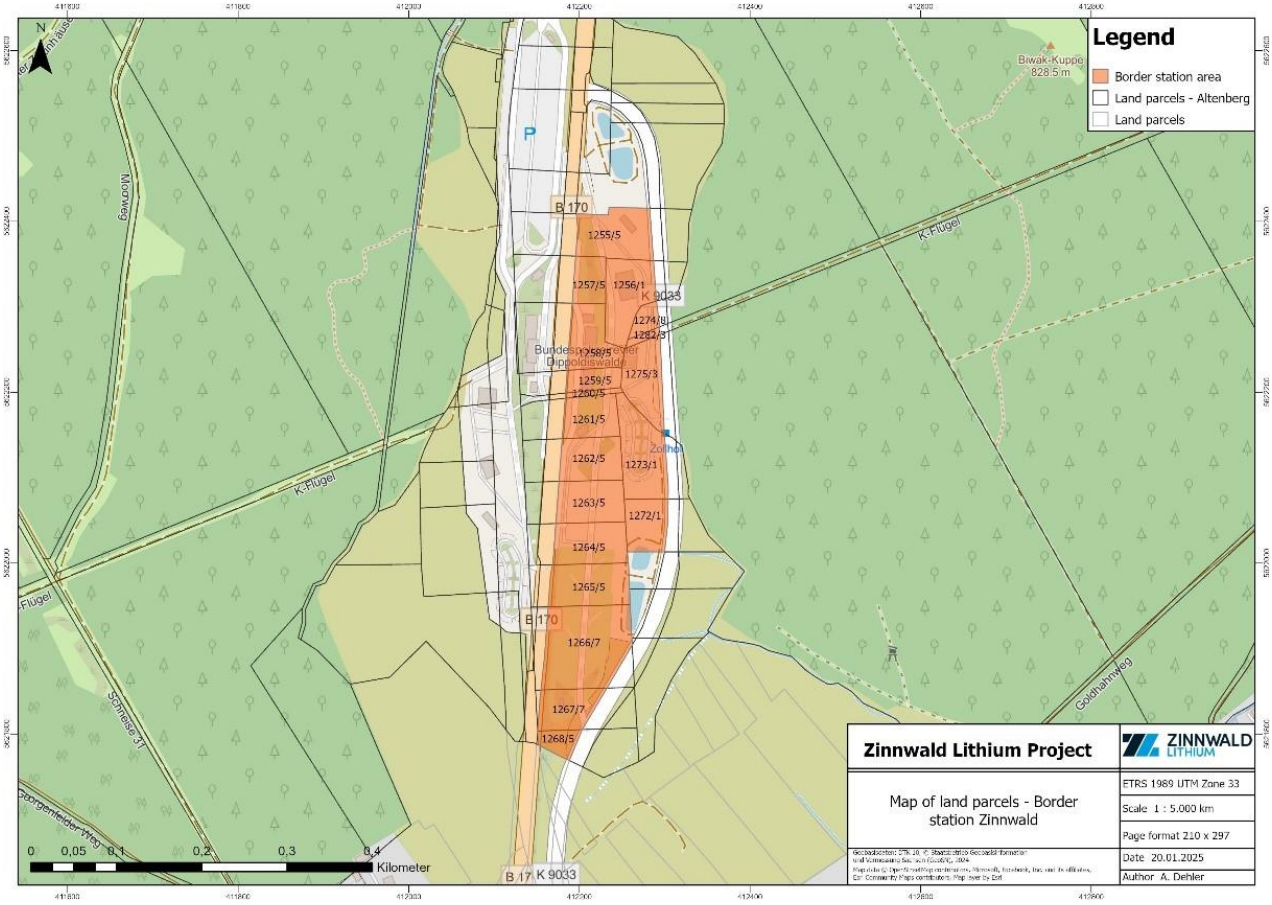
FIGURE 7 LIEBENAU PROCESSING PLANT AND TSF SITE AFFECTED LAND PARCELS



Source: Zinnwald GmbH, LAACF, February 2025

The east side of the former border station located on the B17 federal road to the northwest of Zinnwald has been identified as the location for the above-ground mine facilities and the decline tunnel portal. Approximately 6 ha of land is required of the eastern side of the former border station – see Figure 8 below.

FIGURE 8 FORMER BORDER STATION AFFECTED LAND PARCELS



Source: Zinnwald GmbH, LAACF, February 2025

The former border station land is owned by the town of Altenberg. Most of the land on the eastern side of the former border station is currently unused, with only a building being used by the Federal Police as a storage facility. Some of the buildings on the other western side of the former border station are used as accommodation for asylum seekers. Land is not required by the Project on the western side of the former border station.

Additional permanent land may be needed for compensation of natural resources or for mine ventilation (a few square metres for two to three shafts in the Zinnwald area).

In addition to this, temporary land will be required, for example, for surveys and to gain access to certain locations, such as for the construction of the ventilation adits for the tunnel. This will be managed in a similar way to the process to obtain access to land for drilling campaigns, water boreholes and other surveys.

8.3.5.2 LAND USE

The European Commission notes that Saxony has about 18,413 km^2 of land area: 89.1% rural land, 49.6% agricultural land and 28.4% forestland.[120]

Saxony is renowned for its wine production and agricultural activities, with winegrowing having a tradition of over 800 years, and its vineyards, though small in area, contributing significantly to the region's cultural heritage.[121]

Agriculture in Saxony utilises about 56% of the state's land area, with 80% of this being arable land and 20% permanent grassland.[122] The state's agricultural sector is diverse, producing a variety of crops and livestock, contributing significantly to its economy.

The area of the Saxon Switzerland-Eastern Ore Mountains District extends south of Dresden to the Czech border, covering an area of 1,654.18 km².[123] The Altenberg Municipality covers an area of 165.95 km², Bad Gottleuba-Berggießhübel spans 88.72 km², Liebstadt occupies 37.4 km², and Glashütte extends over 95.64 km². The respective percentages of the total district area are: Altenberg 10.03%, Bad Gottleuba-Berggießhübel 5.36%, Liebstadt 2.26%, and Glashütte 5.78%.

Table 19 below provides an overview of the land areas and uses broken down for the two districts within the Direct Socioeconomic and Health AoI: the municipalities of Altenberg and Bad Gottleuba-Berggießhübel from 2022. Agricultural areas and forests make up most of the land area/usages within both municipalities.[124] Further detail is required as part of the ESIA to explore people's use of the forests (e.g. commercial purposes such as logging and /or personal use such as collection of firewood).

TABLE 19 LAND USE BREAKDOWN IN THE MUNICIPALITES OF ALTENBERG AND BAD GOTTLEUBA-BERGGIEßHÜBEL AS OF 2022

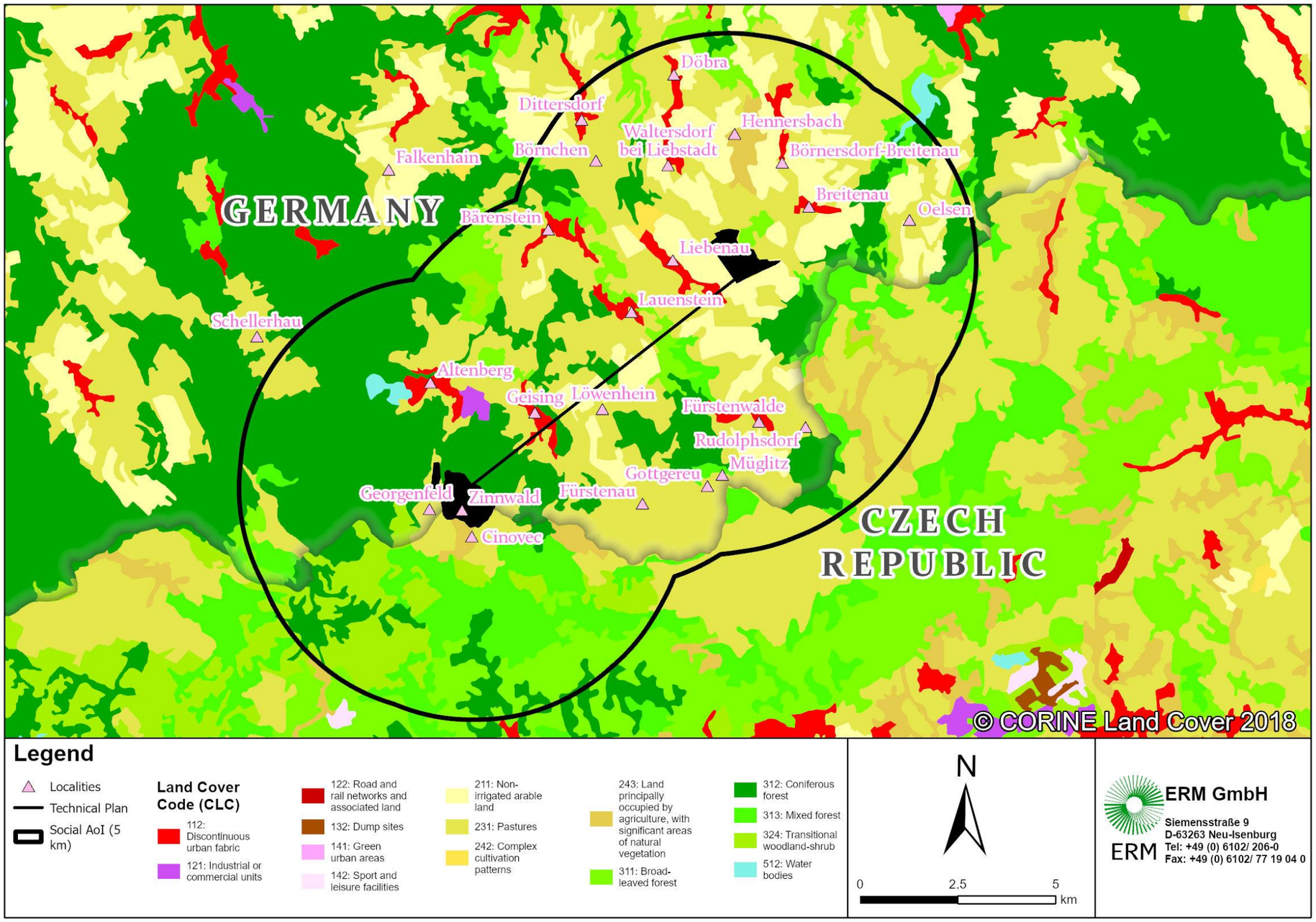
Area	Type of Land Use	Portion of total district land area (%)
Altenberg Municipality	Residential Area	4.6
	Traffic and roadways	3.1
	Waterways	na
	Industry and commercial space	0
	Leisure, recreational, and sports areas	0.7
	Agriculture	36.2
	Forests	53.2

[120] Source: European Commission, Factsheet on 2014-2020 rural Development Program for Saxony (Germany), retrieved from: https://ec.europa.eu/enrd/sites/default/files/de_saxony_rdp_qnt_summary_v1_3.pdf, accessed in January 2025.
[121] Source: Wines of Germany, retrieved from: https://www.winesofgermany.com/our-regions/growing-area/75/sachsen?utm_source, accessed in January 2025.
[122] Source: EU Network for Rural Development, retrieved from: https://ec.europa.eu/enrd/enrd-static/fms/pdf/171E1705-F788-4FBB-BEA3-03EEB45BCE5F.pdf?, accessed in January 2025.
[123] Source: Sächsische Schweiz-Osterzgebirge, retrieved from: https://www.landratsamt-pirna.de/zahlen-daten-fakten.html#:~:text=Das%20Gebiet%20des%20Landkreises%20S%C3%A4chsische,von%201.654%2C18%20km2. Accessed in January 2025.
[124] Source: State Statistical Office, Germany, Municipal data profiles: Altenberg and Bad Gottleuba-Berggieshübel, 2025, retrieved at: https://regionalatlas.statistikportal.de/https://www.statistik.rlp.de/no_cache/de/regional/kommunaldatenprofil/, accessed in January 2025.

Area	Type of Land Use	Portion of total district land area (%)
Bad Gottleuba-Berggießhübel Municipality	Residential Area	3.8
	Traffic and roadways	3.6
	Waterways	0
	Industry and commercial space	0
	Leisure, recreational, and sports areas	0.4
	Agriculture	45.1
	Forests	44.8
Liebstadt Municipality	Residential Area	1.9
	Traffic and roadways	2.7
	Waterways	0
	Industry and commercial space	0
	Leisure, recreational, and sports areas	0.2
	Agriculture	65.2
	Forests	28.2
Glashütte Municipality	Residential Area	3.7
	Traffic and roadways	2.9
	Waterways	0
	Industry and commercial space	0
	Leisure, recreational, and sports areas	0.4
	Agriculture	59.1
	Forests	32.5

Source: Statistical Office Germany, 2025, retrieved at: https://regionalatlas.statistikportal.de/

FIGURE 9 PRELIMINARY LAND USE MAP RELATIVE TO THE DIRECT SOCIOECONOMIC AND HEALTH AOI



Source: ERM 2025

Figure 9 above shows the land use within the Direct Socioeconomic and Health AoI and specific Project site areas; the black line represents a 5 km buffer from the Project footprint and its components which are represented as the grey line with the main mineral processing plant and TSF located near Liebenau.

Overall, the land within this area is mostly a combination of agricultural and farmland, with a big proportion of coniferous forest in Zinnwald. Agricultural lands are a significant land use category, including pastures (light yellow green), complex cultivation patterns (yellow), and areas primarily used for agriculture with significant natural vegetation (light brown). These agricultural zones are most prominent near settlements such as Geising, Liebenau, and in the northern part of the Project footprint, emphasising the importance of farming activities to the region's economy and livelihoods. Agriculture production is considered essential provisioning service[125] within this land area.

Smaller industrial or commercial zones (bright purple) are visible around Altenberg and some other locations, showcasing areas of economic activity beyond agriculture and forestry. Additionally, areas used for sport and leisure (light pink) are present, particularly in Altenberg, reflecting the region's role as a hub for tourism and outdoor recreation.

In summary, the land use within the region encompasses a balanced mix of forests, agriculture, and residential settlements, alongside areas of economic and recreational activity. This composition underscores the importance of sustainable land management for supporting both livelihoods and biodiversity.

Within Czech Republic, the area of the Ústecký Region is 5,339 square kilometres, which is 6.8% of the Czech Republic’s total area. Agricultural land covers more than 51% of the Region’s territory, forests cover almost 31%, and bodies of water 2% of the territory[126]. The Teplice district represents 0.4% of the country’s total agricultural land area of 4.2 million ha, 0.3% of the country’s total arable land area of 2.9 million ha, 0.8% of the country’s total non-agricultural land area of 3.7 million ha and 0.7% of the country’s total forest land area of 2.6 million ha.[127]

8.3.6 SOCIAL INFRASTRUCTURE AND PUBLIC SERVICES

8.3.6.1 TRANSPORT INFRASTRUCTURE

Road System

Germany possesses a highly developed and efficient infrastructure network, including highways, and well-maintained national roads, along with an extensive rail network, and public transit options. The southern part of the Direct Socioeconomic and Health AoI is well connected to the broader transportation network through the Bundesstraße B170, which links Altenberg and Liebenau. Additionally, the AoI benefits from the E55/17 route and the A17

[125] Provisioning services are a type of ecosystem service, in which certain goods are produced or provided for by the ecosystems itself. Ecosystem services are a valuable form of analyzing the relationships or nexus between social and environmental land uses.
[126] Source: Czech Statistical Office, Statistical Yearbook of the Ústecký Region - 2023, retrieved from https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025.
[127] Source: Czech Statistical Office, retrieved from: Statistical Yearbook of the Ústecký Region - 2023 | Products, accessed in March 2025.

autobahn, which provide a vital connection between Dresden and Prague. Several regional roads provide access to smaller settlements and agricultural areas in the region.

Secondary roads and paths within the Direct Socioeconomic and Health AoI are commonly used for local agricultural transport and recreational activities such as hiking and cycling, reflecting the rural and natural character of the region. Public transport is managed by the Verkehrsverbund Oberelbe (VVO). The VVO coordinates regional bus and train services, ensuring connectivity between towns like Altenberg, Dresden, and the surrounding rural areas.

The Ústecký Region has an important location in terms of transport within the European Union. The E55 international motorway runs through the Teplice District and the Litoměřice District, linking the north and south of Europe, and continuing from the town of Lovosice as the D8 motorway. At the end of 2006, a new segment of the D8 motorway over Krušné hory (the Ore Mountains) with a direct connection to the German A17 motorway was open to traffic. Another important trunk road is the road leading from the Karlovarský Region along Krušné hory (the Ore Mountains) to the northern part of the Liberecký Region.[128]

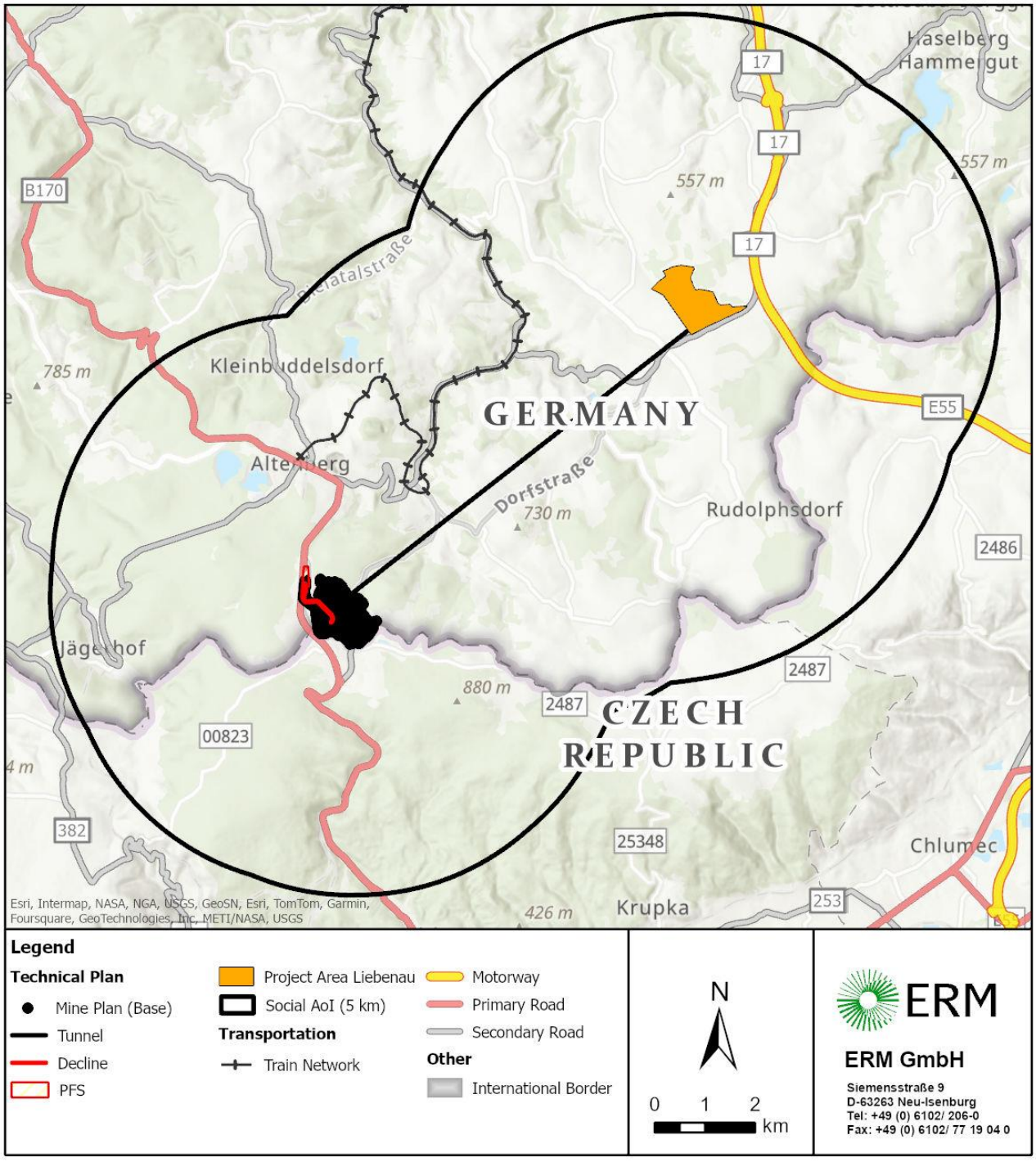
Rail System

While there is no direct rail connection to all settlements within the Direct AoI, Altenberg is accessible via the Müglitztal Railway (Müglitztalbahn), offering connectivity to Dresden and other regional centres. The nearest rail links to the mine site are at Geising (4 km) and Altenberg (6 km), both situated on the Altenberg–Heidenau railway line.

Figure 10 shows an overview of the transport infrastructure of the Project's Direct Socioeconomic and Health AoI, featuring, motorways, primary and secondary roads, as well as rail networks.

[128] Source: Czech Statistical Office, Statistical Yearbook of the Ústecký Region - 2023, retrieved from https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025.

FIGURE 10 TRANSPORT INFRASTRUCTURE IN THE DIRECT SOCIOECONOMIC AND HEALTH AOI



Source: ERM 2025

The international railroad from the Federal Republic of Germany via the city of Ústí nad Labem to Prague is the main railway route in the Ústecký Region in Czech Republic. [129]

[129] Source: Czech Statistical Office, Statistical Yearbook of the Ústecký Region - 2023, retrieved from https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025.

Air and Marine Transport

There are no airports and landing areas for private jets and aircrafts within the Direct Socioeconomic and Health AoI. Dresden Airport serves as the nearest airport (domestic and international, approximately 70 km away), as well as Pirna-Pratzschwitz Airfield, which caters to smaller aircrafts, and is located 3-4 km east of the town Pirna and is close to the Pratzschwitz area, which is part of the municipality of Pirna. Additionally, the Direct Socioeconomic and Health AoI is well connected to major waterway transport routes for logistics and tourism. The Elbe River, one of the most significant rivers in Central Europe, serves as a key waterway for both commercial and passenger transport. It connects the area to the broader European waterway network, facilitating the movement of goods such as coal, chemicals, and manufactured products. The Elbe is also a popular route for tourist cruises, linking destinations like Dresden and Meissen with other European river towns, contributing to the region's tourism industry.

8.3.6.2 WATER AND SANITATION

Each household in Germany uses an average of about 130 litres of water per day. Access to safe water and adequate sanitation is universally ensured, with over 99% of the population connected to public water supply systems. In Saxony, these services are primarily managed by municipal utilities (Kommunale Wasser- und Abwasserbetriebe) and regional special-purpose associations (Zweckverbände), which are responsible for water extraction, treatment, and distribution, as well as wastewater collection and treatment. Reservoirs are the backbone of Saxony's drinking water supply. The State Reservoir Administration (Landestalsperrenverwaltung des Freistaates Sachsen (LTV)), a government agency responsible for managing reservoirs and water sources in Saxony, can provide around 380 million cubic meters of reservoir water annually for drinking and utility water supply. This places the Free State of Saxony in a very comfortable position, with water scarcity not being an issue.[130] Additionally, most of the reservoirs in Saxony are interconnected in a network, allowing for water to be distributed even during prolonged dry periods. Well-known providers include the Zweckverband Wasser/Abwasser Mittleres Erzgebirgsvorland and the Leipziger Wasserwerke, ensuring high-quality standards and compliance with regulatory requirements.[131]

Wasserversorgung Weißeritzgruppe GmbH is responsible for providing clean potable water in Altenberg, *Zweckverband Wasserversorgung Pirna/Sebnitz* is responsible for Bad Gottleuba-Berggieshübel, Liebstadt, Glashütte and Bahretal municipalities.

As of 2022, approximately 97.9% of the population in Ústecký Region in Czech Republic was supplied with water from public water supply systems. The total drinking water supplied from public water supply systems was 46.3 million m^3, with approximately 128.2 litres invoices per capita per day in 2022, indicating a very stable supply compared to the previous year. [132]

In what regards access to sanitation, 86.7% of the population living in houses in Ústecký Region in Czech Republic was connected to public sewerage systems in 2022. Approximately

[130] Source: Wasserversorgung Weißeritzgruppe GmbH (WVWGmbH), retrieved from: https://www.wvwgmbh.de/lebensgut-wasser/trinkwasser-infos/, accessed in March 2025.
[131] Source: ZWAV, retrieved from: https://www.zwav.de/?utm_source, accessed in January 2025.
[132] Source: Czech Statistical Office, retrieved from: Statistical Yearbook of the Ústecký Region - 2023 | Products, accessed in March 2025.

35.4 million m^3 of wastewater were discharged into public sewerage systems in the region, out of which 98.6% was treated wastewater. [133]

8.3.6.3 BORDERS

Zinnwald village and the mine site are located on the border between Germany and the Czech Republic. A former border station is located at Zinnwald, which is also the proposed site for the Project's planned exploration tunnel and above-ground mine facilities. Vehicles and pedestrians can cross into or out of Germany at this border station.

8.3.6.4 HOUSING

As of 2022, the housing situation in Bad Gottleuba reflected a modest share of land allocated to residential areas. The settlement area accounts for 3.8% of the total land area in the municipality, while residential construction covers 2.3%. The housing stock in Bad Gottleuba consists of 10.5% apartments with one or two rooms per 100 apartments, which is slightly below the average for Saxony at 11.1%. A significant portion of residential buildings, 65.5%, are single-apartment structures, which is above the regional average of 63%. The average housing area per resident in Bad Gottleuba is 46.6 square meters, slightly higher than the Saxony average of 44.9 square meters. In terms of new construction, there were 0.7 new residential building permits issued per 1,000 residents, which is lower than the Saxony average of 1.1. Furthermore, the completion of new housing units is relatively low, with only 0.1 new units per 100 existing housing units, compared to the regional rate of 0.4 per 100. These figures suggest a stable but modest housing market in the municipality, with a greater emphasis on single-apartment residences and limited new construction activity.[134]

The housing situation in Altenberg reflects a somewhat higher residential land usage compared to Bad Gottleuba as of 2022. The settlement area makes up 4.6% of the total land area, and residential land constitutes 2.2%. In terms of housing, 5.0% of apartments have one or two rooms per 100 apartments, which is significantly lower than the Saxony average of 11.1%. A large portion of residential buildings in Altenberg, 67.5%, are single-apartment structures, above the regional average of 63%. The average housing area per resident is 50.1 square meters, which is above the Saxony average of 44.9 square meters. Regarding new construction, 0.8 new residential building permits were issued per 1,000 residents, which is slightly lower than the Saxony average of 1.1. The completion of new housing units is also relatively low, with only 0.2 new units per 100 existing housing units, compared to the regional rate of 0.4 per 100. This suggests that while the housing market in Altenberg is stable, there is limited new construction and a dominance of single-apartment buildings in the area.[135]

As of 2022, in Liebstadt, the settlement area makes up 1.8% of the total land area, with residential land accounting for 1.4%. The housing stock in Liebstadt shows that 5.5% of apartments have one or two rooms per 100 apartments, which is below the Saxony average of

[133] Source: Czech Statistical Office, retrieved from: Statistical Yearbook of the Ústecký Region - 2023 | Products, https://csu.gov.cz/docs/107508/41741906-2d66-6850-df95-a9fdd67d3970/330085230310.xlsx?version=1.0, accessed in March 2025.
[134] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_bad-gottleuba-berggiesshuebel-stadt-14628020.pdf, accessed in January 2025.
[135] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_altenberg-stadt-14628010.pdf, accessed in January 2025.

11.1%. A majority, 64.5%, of residential buildings are single-apartment structures, above the regional average of 63%. The average housing area per resident is 49.1 square meters, higher than the Saxony average of 44.9 square meters. New housing construction is relatively high, with 2.4 new building permits issued per 1,000 residents, well above the regional average of 1.1. However, the completion of new units remains modest, at 0.3 new units per 100 existing housing units, compared to the regional rate of 0.4 per 100. This indicates moderate housing development activity in Liebstadt.[136]

As of 2022, in Glashütte, the settlement area constitutes 3.7% of the total land area, with residential land accounting for 2.4%. In terms of housing, 8.2% of apartments have 1 or 2 rooms per 100 apartments, which is lower than the Saxony average of 11.1%. Most residential buildings, 64.4%, are single-apartment structures, similar to the regional average of 63%. The average housing area per resident is 46.7 square meters, which is slightly above the Saxony average of 44.9 square meters. However, new housing construction remains low, with only 0.3 new building permits issued per 1,000 residents, significantly below the regional average of 1.1. The completion of new units is also limited, with only 0.2 new units per 100 existing housing units, compared to the regional rate of 0.4 per 100. This suggests limited housing development activity in Glashütte.[137]

Within the Direct Socioeconomic and Health AoI, there are a couple of hotels and a variety of smaller inns[138], offering a range of accommodation options for residents and visitors alike.[139]

As of 2022, there were a total of 3,064 beds in collective accommodation establishments in Ústecký Region, Czech Republic. There were also 223 dwellings registered to have started construction, out of which 136 were completed. These numbers were quite similar to those characterising the previous year.[140] More disaggregated information at municipal or village level is not available from public data.

8.3.6.5 ENERGY

Since 2024, Germany has completely stopped importing gas from Russia, instead sourcing its gas primarily from Norway (48%), the Netherlands (25%), and Belgium (18%), while Liquefied Natural Gas (LNG) imports through German terminals contributed 8% of its supply. Despite a slight increase in gas consumption in 2024 (844 terawatt hours (TWh), up 3.5% from 2023), total consumption remained 14% below the 2018–2021 average due to improved efficiency and reduced industrial and household usage.[141]

The Saxon Switzerland-Eastern Ore Mountains District is focusing on energy transition measures, with an emphasis on renewable energy sources. Projects include the installation of

[136] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_liebstadt-stadt-14628230.pdf, accessed in January 2025.
[137] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_glashuette-stadt-14628130.pdf, accessed in January 2025.
[138] In German *Gasthöfe*
[139] Rathaus Altenberg, retrieved from: https://www.rathaus-altenberg.de/eintrag/, accessed in January 2025.
[140] Source: Czech Statistical Office, retrieved from: Statistical Yearbook of the Ústecký Region - 2023 | Products, accessed in March 2025.
[141] Source: Bundesnetzagentur, retrieved from: https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2025/20250108_GAS.html?utm_source=chatgpt.com, accessed in January 2025.

photovoltaic systems, the conversion of street lighting to Light-Emitting Diode (LED) technology, and the promotion of electromobility, all contributing to a more sustainable energy infrastructure. However, despite the increasing adoption of renewable energy, conventional energy sources remain significant for the region's overall energy supply.[142]

Energy supply is managed by Energieversorgung Pirna (EVP) in Bad Gottleuba and by Energieversorgung Altenberg GmbH (EVA) in Altenberg, both providing electricity, natural gas, and heating services while prioritizing renewable energy and regional sustainability.

In the Direct AoI, Altenberg is connected to the national power grid via a 110 kV OHL which currently terminates approximately 5 km from the Zinnwald mine site. It is likely that this OHL will be the closest existing connection for the Project. The local power supplier is SachsenNetze. The nearest major gas pipeline runs south of Dresden and the local distribution extends to Zinnwald and Lauenstein. The local supplier is SachsenEnergie.

8.3.6.6 TELECOMMUNICATIONS

In the municipalities within the Direct Socioeconomic and Health AoI, telecommunications and internet services vary in availability and quality.

In Bad Gottleuba-Berggießhübel, several internet providers, including Telekom, Vodafone, 1&1, SachsenEnergie, and MAINGAU Energie, are active. However, fibre optic coverage is currently around 24%, indicating that expansion is still limited. In Altenberg, fibre optic expansion is also underway but remains incomplete. Currently, about 24% of households in the municipality have fibre optic connections. The completion of the expansion has been delayed due to a limited number of offers from providers. Regarding cable internet, only 21% of the 7,900 households in Altenberg currently have access to speeds of at least 100 MBit/s, with another 21% able to access speeds of at least 50 MBit/s. The Digital Subscriber Line(DSL) expansion in Altenberg is progressing well, with 35% of households able to access speeds of at least 250 megabits per second (MBit/s). Additionally, 76% of households can surf at speeds of at least 100 MBit/s, and 85% have access to speeds of at least 50 MBit/s.143

In both Liebstadt and Glashütte, the fibre optic expansion is underway, with several internet providers offering services. However, the exact coverage and speeds are not specified in the available sources. Overall, the region is making significant progress in improving internet infrastructure, with ongoing projects aimed at increasing coverage and speeds for residents.

8.3.6.7 RECREATION AND LEISURE

The region’s mining history has influenced its culture and economy. Key attractions in the Direct Socioeconomic and Health AoI include the Marie Louise Stolln in Berggießhübel and one in Zinnwald, offering guided tours of historic tunnels and traditional ore extraction methods.

Further recreational infrastructure within the Direct Socioeconomic and Health AoI includes sports complexes, park areas, public swimming pools, camping areas, and nature reserves as well as the Saxon Switzerland Wildlife Park (Wildpark Osterzgebirge) near Geising, which offers opportunities to explore local wildlife and engage in family-friendly activities.

[142] Source: Kommunale Energie-und Klimabudgets genehmigt, retrieved from: https://www.landratsamt-pirna.de/kommunale-energie-klimabudgets-genehmigt-29528.html, accessed in January 2025.
[143] Internetanbieter, retrieved from: https://www.internetanbieter.de/staedte/dsl-in-altenberg/?utm_source, accessed in January 2025.

8.3.7 COMMUNITY HEALTH, SAFETY AND SECURITY

8.3.7.1 DETERMINANTS OF HEALTH

In assessing the potential community health and wellbeing impacts of the Project, the World Health Organization's (WHO) definition of health was applied: "*Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*" (WHO, 2006). A determinant of health is any characteristic of a population or individual's social or physical environment, as well as personal behaviours, which could increase the likelihood of developing a disease.

TABLE 20 DETERMINANTS OF HEALTH

Categories of Determinants of Health	Examples of Specific Health Determinants
Individual factors: Genetic; biological; lifestyle; behavioral; and/or circumstantial, of which some can be influenced by proposals and plans	Gender; age; dietary intake; level of physical activity; tobacco use; alcohol intake; personal safety; sense of control over own life; employment status; educational attainment; self-esteem; life skills; stress levels; etc.
Social factors: Community, economic and/or financial conditions	Access to social and health-related services and community; social support or isolation; housing; income; distribution of wealth; sexual customs and tolerance; racism; attitudes to disability; trust; sites of cultural and spiritual significance; local transport options available; etc.
Environmental factors: Physical	Quality of air, water, and soil; access to safe drinking water and adequate sanitation; disease vector breeding places; land use; urban design
Institutional factors: The capacity, capabilities, and jurisdiction of public sector services	Availability of services, including health, transport, and communication networks; education and employment; environmental and public health legislation; environmental and health monitoring systems; laboratory facilities; etc.

Source: IFC, 2009.

Information to describe all these categories has not been consistently available for the Direct Socioeconomic and Health AoI and will be collected as part of the ESIA baseline. Proxy information is presented at the level for which it was available throughout the following sections. Other factors relevant to determinants of health that are covered elsewhere in the baseline include socioeconomic status (Section 8.3.4); access to and quality of water and sanitation services, and adequate housing (Section 8.3.6); access to education (Section 8.3.3), and Gender-Based Violence and Harassment (GBVH) (Section 8.3.7.5).

8.3.7.2 HEALTH STATUS

Germany - Federal Level Overview

Several measures of general health status, such as life expectancy (how long an individual from a certain population is expected to live), mortality rates, birth rates, and doctor to population ratios are common indicators of the overall health of a population.

In 2021, the World Bank noted that the average life expectancy at birth for the German population is 81. Females are projected to live to 83.2 years whereas men have a slightly lower life expectancy of 78.3 years. Comparatively, the World Health Organization (WHO) reported that in 2021, the healthy life expectancy at birth in Germany was 68.9 years. In

Germany, cardiovascular diseases are the leading cause of death, accounting for 35.3% of all deaths in 2019.[144] Specifically, ischemic heart disease is a significant contributor, with a mortality rate of 220.6 deaths per 100,000 population.[145]

In addition to cardiovascular diseases, in Germany, the leading non-communicable diseases contributing to mortality include cancers, and cerebrovascular diseases. Regarding communicable diseases, tuberculosis (TB) remains a significant concern. In 2021, Germany reported 3,896 TB cases, corresponding to an annual incidence of 4.7 cases per 100,000 population.[146]

In Germany, the maternal mortality ratio is approximately 4.45 deaths per 100,000 live births, indicating a low risk associated with childbirth.[147] In the years 2019 to 2023, infant deaths in Germany have generally declined, with the most significant reduction in deaths occurring within the first year, from 2,485 in 2019 to 2,189 in 2023, with notable decreases in deaths occurring after 28 days up to 12 months.[148]

Mental health issues are also prevalent in Germany, with a significant portion of the population experiencing mental health disorders. According to the German Society for Psychiatry, Psychotherapy, and Neurology (DGPPN), around 30% of Germans experience mental health problems at some point in their lives. Common conditions include depression, anxiety disorders, and stress-related illnesses. In recent years, there has been a rise in the recognition of mental health challenges, partly due to increased awareness and societal shifts.[149]

The prevalence of obesity, alcohol consumption, and illicit drug use varies across different regions in Germany. Nationally, 46.6% of women and 60.5% of men are affected by overweight, including obesity. Nearly one-fifth of adults (19%) have obesity.[150] Harmful alcohol consumption is prevalent, with 13.1% of women and 18.5% of men consuming more than 10 grams (g) and 20 g of pure alcohol daily, respectively. The share of men with harmful alcohol consumption rises with age, reaching nearly one-fourth in the 60 to 69 years age group.[151]

Cannabis is the most widely used illicit drug, with a 12-month prevalence of 7.4%. The national drug report for Germany in 2019 indicates a gradual shift in the prevalence of recreational/illicit drug use from older to younger age groups.[152]

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[144] Source: Destatis, retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Health/Causes-Death/_node.html?utm_source, accessed in January 2025.
[145] Source: WHO, retrieved from: https://data.who.int/countries/276, accessed in January 2025.
[146] Source: RKI, retrieved from: https://www.rki.de/EN/Content/infections/epidemiology/inf_dis_Germany/TB/summary_2021.html?utm_source, accessed in January 2025.
[147]Source: WHO, retrieved from: https://data.who.int/countries/276, accessed in January 2025.
[148] Source: Destatis, retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Population/Deaths-Life-Expectancy/Tables/infant-deaths.html, accessed in March 2025.
[149] Source: BMJ Mental Health, retrieved from: https://mentalhealth.bmj.com/content/8/1/28.1?utm_source, accessed in January 2025.
[150] Source: RKI, retrieved from: https://www.rki.de/EN/Content/Health_Monitoring/Main_Topics/Overweight_Obesity/obesity_node.html?utm_source, accessed in January 2025.
[151] Source: NIH, retrieved from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9838581/?utm_source, accessed in January 2025.
[152] Source: Sage Journal, retrieved from: https://journals.sagepub.com/doi/abs/10.1177/095646242095916 9?utm_source , accessed in January 2025.

State and AoI level

In Saxony, life expectancy (at birth) for men is 75.49 years (less than national average), whereas women have a life expectancy of 83.61 years (slightly above national average).[153] The age distribution within the Direct Socioeconomic and Health AoI reflects a balanced demographic composition with notable variations among the municipalities. Regarding mortality rates, specific data for Saxony is limited. There is a notably high mortality rate from myocardial infarction and ischemic heart disease compared to other German states.

Bad Gottleuba has 8.93% of its population classified as severely disabled, which is similar to the district average of 9.01% and slightly lower than the Saxony average of 10.7%. The Saxony range varies from 4.71% to 21.13%. Among those with severe disabilities in Bad Gottleuba, 63.6% are aged 65 and older, which is close to the district average of 60.8% and the Saxony average of 63.4%. Bad Gottleuba has 1.21% of elderly residents receiving care assistance, which is significantly higher than the district average of 0.97% but within the Saxony range (0.0% to 10.7%).[154]

Based on statistical data from 2022, Altenberg has 9.03% of its population classified as severely disabled, aligning closely with the district average of 9.01% but lower than the Saxony average of 10.7%. The Saxony range varies from 4.71% to 21.13%. Among those with severe disabilities in Altenberg, 62.4% are aged 65 and older, similar to the district average of 60.8% and the Saxony average of 63.4%. Altenberg has 0.64% of elderly residents receiving care assistance, lower than the district average of 0.97% and the Saxony average of 1.3%. The range in Saxony spans from 0.0% to 10.7%.[155]

In Glashütte, 7.69% of the population has severe disabilities, which is below the district average (9.01%), the Saxony average (10.7%), and within the Saxony range of 4.71% to 21.13%, 0.79% of elderly residents receive care assistance, which is lower than the district average of 0.97% and the Saxony average of 1.3%, with the range in Saxony spanning from 0.0% to 10.7%.Liebstadt has 7.47% of its population classified as severely disabled, which is lower than the district average of 9.01% and the Saxony average of 10.7%. The Saxony range varies from 4.71% to 21.13%. Among those with severe disabilities in Liebstadt, 63.2% are aged 65 and older, which is close to the district average of 60.8% and the Saxony average of 63.4%. Liebstadt has no recorded recipients per 1,000 elderly residents in 2022. This is much lower than the district average (9.7 recipients per 1,000 elderly residents) and the Saxony range (0.0 to 107.0).

Czech Republic

According to the Czech Republic Country Health Profile 2023, life expectancy in Czech Republic grew at about the same rate as the EU average in the two decades before the pandemic. It declined between 2019 and 2021, and then slightly increased to 79.1 years in 2022, approximately 1.6 years below the EU average of 80.7 years. In 2022, Czech women could

[153] Source: Statistiches Bundesamt, Population: deaths, life expectancy (2022), retrieved from: https://www.destatis.de/EN/Themes/Society-Environment/Population/Deaths-Life-Expectancy/_node.html, accessed in December 2024.
[154] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_bad-gottleuba-berggiesshuebel-stadt-14628020.pdf, accessed in January 2025.
[155] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_altenberg-stadt-14628010.pdf, accessed in January 2025.

expect to live on average 5.8 years longer than men (82.0 years compared to 76.2 years) – a slightly greater gender gap than the EU average gap of 5.4 years[156].

Circulatory diseases, cancer and COVID-19 were the main causes of death in 2021, accounting for over 70 % of all deaths. Circulatory diseases accounted for 34 % of all deaths and ischaemic heart diseases were the most significant cause of death within this group. Cancer was the second leading cause of death in 2021 (19%), with lung cancer the leading cause of cancer death, followed by colorectal cancer. In 2021, COVID-19 accounted for 17.9 % of all deaths in Czech Republic (about 25 000 deaths) – one of the largest proportions among all EU countries. [157]

Environmental factors such as air pollution contribute to a considerable number of deaths, with about 6 % of all deaths attributable to exposure to fine particulate matter (PM2.5) and ozone alone. Deaths from air pollution are mainly linked to circulatory diseases, respiratory diseases and some cancer. [158]

In Czech Republic, the maternal mortality ratio was 3.4 deaths per 100,000 live births in 2020 (most recent data available), lower than the Europe average of 13.2, indicating a low risk associated with childbirth.[159] The infant mortality rate in 2022 was 1.3 deaths per 1,000 live births, also lower than the European average of 4.

Nearly half of all deaths in Czech Republic in 2019 could be attributed to behavioural risk factors, including dietary risks, tobacco smoking, alcohol consumption and low levels of physical activity. Alcohol consumption and obesity rates were higher than the EU averages. The prevalence of behavioural risk factors in Czech Republic, as in other EU countries, tends to be higher among the least educated and lowest income groups. Smoking and alcohol consumption also tends to be higher among men than women, which is also reflected in the gender-based differences on life expectancy. Mortality rates from preventable and treatable causes in Czech Republic are 25% higher than the EU averages.[160].

About one in seven people in Czech Republic were estimated to have some mental health disorders in 2019. Depression, anxiety and alcohol and drug-use disorders were the most prevalent mental health issues. [161]

In 2021, Czech Republic had 4.3 doctors per 1,000 population, slightly above the EU average of 4.1 per 1,000. The proportion of nurses (9.0 per 1,000 population) was also slightly above the EU average (8.5 per 1,000).

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[156] Source: Organisation for Economic Co-operation and Development (OECD). *Czech Republic Country Health Profile 2023*, retrieved from https://www.oecd.org/en/publications/2023/12/Czech Republic-country-health-profile-2023_dde66b1d.html accessed in March 2025
[157] Source: Organisation for Economic Co-operation and Development (OECD). *Czech Republic Country Health Profile 2023*, retrieved from https://www.oecd.org/en/publications/2023/12/Czech Republic-country-health-profile-2023_dde66b1d.html accessed in March 2025
[158] Source: Organisation for Economic Co-operation and Development (OECD). *Czech Republic Country Health Profile 2023*, retrieved from https://www.oecd.org/en/publications/2023/12/Czech Republic-country-health-profile-2023_dde66b1d.html accessed in March 2025
[159]Source: WHO, retrieved from: https://data.who.int/countries/276, accessed in January 2025.
[160] Source: Organisation for Economic Co-operation and Development (OECD). *Czech Republic Country Health Profile 2023*, retrieved from https://www.oecd.org/en/publications/2023/12/Czech Republic-country-health-profile-2023_dde66b1d.html accessed in March 2025
[161] Source: Organisation for Economic Co-operation and Development (OECD). *Czech Republic Country Health Profile 2023*, retrieved from https://www.oecd.org/en/publications/2023/12/Czech Republic-country-health-profile-2023_dde66b1d.html accessed in March 2025

In what concerns communicable diseases, tuberculosis (TB) incidence grew from 4.1 cases per 100,000 population in 2022 to 4.8 in 2023 but the levels are below the European average of 24 cases per 100,000 population.[162]

8.3.7.3 EMERGENCY SERVICES

The Saxon legislature defines emergency rescue in the Saxon Fire Protection, Emergency Medical Services, and Disaster Protection Act, also known as the "Blue Light Law," as follows: "*Emergency patients are those who are sick or injured and are in life-threatening conditions or at risk of serious health damage if they do not receive immediate medical assistance.*" To ensure emergency medical services are accessible, fifteen rescue stations are strategically distributed within the district of Saxon Switzerland-Eastern Ore Mountains, Altenberg, Bad Gottleuba-Berggießhübel and Glashütte as well have emergency medical services located in their municipalities as well as other settlements outside the Direct Socioeconomic and Health AoI.[163]

People from Altenberg can contact emergency services in case of a life-threatening situation through the national emergency numbers for fire, police, or medical emergencies, and for non-life-threatening situations outside of regular office hours, they can reach the nationwide on-call medical service via the designated contact page www.rathaus-altenberg.de/not-bereitschaftsdienst/. Additionally, for patients requiring transport or individuals with hearing impairments, other specialized services are also available via the same page.

People from Bad Gottleuba, Liebstadt and Glashütte can find a list of available doctors for non-emergency situations outside of regular office hours via the designated contact page for Bad Gottleuba: www.stadt-bgb.de, for Liebstadt: www.stadt-liebstadt.de and for Glashütte here www.glashuette-sachs.de/de/aerzte/fachaerzte.html. However, emergency contact numbers for immediate assistance, such as fire, police, or medical emergencies, are not provided on this page.

There is no online information available regarding the locations and addresses of emergency services for the municipalities within the Direct Socioeconomic and Health AoI.

In the Altenberg municipality, as a result of the completed municipal amalgamation, the number of district fire brigades has grown to 15. These are located in the following areas within the Direct Socio-economic and Health AoI: Altenberg, Bärenstein, Fürstenau, Fürstenwalde, Geising, Lauenstein, Liebenau, Löwenhain, and Zinnwald.

The municipality of Bad Gottleuba-Berggießhübel currently operates a volunteer fire department with six district fire brigades. A total of 125 active members serve in these fire brigades, supported by 55 members in the youth fire department and 40 in the senior and honorary division. Within the Direct Socioeconomic and Health AoI, fire brigades are located in Börnersdorf and Oelsen. Additional fire brigade stations are situated in settlements outside the direct area of influence, including Markersbach, with further details listed on the municipality's website.

[162] Source: WHO, retrieved from: https://data.who.int/indicators/i/13B4226/C288D13?m49=203 , accessed in March 2025.
[163] Source: Landratsamt Pirna, retrieved from: https://www.landratsamt-pirna.de/notfallrettung-kassenaerztlicher-bereitschaftsdienst.html, accessed in January 2025.

The Volunteer Fire Department of Glashütte is a municipal organisation serving the town of Glashütte. Its responsibilities include not only firefighting and technical assistance but also tasks related to water management and flood response. The Volunteer Fire Department (FFw) Glashütte comprises the local fire brigades among others in Dittersdorf as well which is within the Direct Socioeconomic and Health AoI.

In Liebstadt, there is as well a fire department responsible for the settlements within the municipality, but no further data is provided.

8.3.7.4 HEALTH INFRASTRUCTURE

Federal level

Healthcare in Germany, including in the state of Saxony, is characterised by high-quality medical services and comprehensive coverage. Germany has a universal healthcare system, with mandatory health insurance for all residents, whether through statutory health insurance (SHI) or private health insurance (PHI). SHI covers most of the population (88%).[164]

State level

Residents in Saxony have access to a network of well-equipped hospitals, clinics, and medical facilities. The healthcare system in Saxony, like in the rest of Germany, is funded through a combination of contributions from employees, employers, and the government. This system ensures comprehensive healthcare services are available to all residents.

District and AoI level

The district of Saxon Switzerland-Eastern Ore Mountains has five clinics, seven preventive and rehabilitation facilities, and a wide range of medical practitioners and support services.[165]

For residents of Liebenau, Ölsen, and Rudolphsdorf in the Altenberg and Bad Gottleuba-Berggießhübel area, the nearest health facilities include:[166]

- Fachklinik & Gesundheitszentrum Raupennest in Altenberg – Offers specialized healthcare and wellness services, located in Altenberg;
- MEDIAN Klinik Bad Gottleuba – A rehabilitation and preventive care facility located in Bad Gottleuba, providing a range of medical services; and
- MEDIAN Klinik Berggießhübel – Situated in Berggießhübel, offering rehabilitation and medical care.

In the municipality of Altenberg, residents have access to several smaller healthcare facilities providing primary care, dental care, and specialised services. Altenberg itself has one general practitioner, one internal medicine specialist, and two dentists, along with one specialist practice. Geising offers three general practitioners, and two dentists, ensuring comprehensive local care. Lauenstein is home to one general practitioner, contributing to the healthcare

[164] Source: Germany: health system review 2020, retrieved at: https://eurohealthobservatory.who.int/countries/germany, accessed in January 2025.
[165] Source: Arbeit, Leben, Freizeit, retrieved from: https://www.arbeit-leben-freizeit.de/gesundheit.html, accessed in January 2025.
[166] Source: Arbeit, Leben, Freizeit, retrieved from: https://www.arbeit-leben-freizeit.de/gesundheit.html, accessed in January 2025.

network in the region. These facilities provide essential medical, dental, and veterinary services to residents and visitors.[167]

In Bad Gottleuba, 50% of buildings are 13.9 km from the nearest hospital, higher than the district average (8.3 km), the Saxony average (6.8 km), and below the Saxony maximum (28.7 km). The distance to the nearest care home for 50% of buildings is 2.5 km, slightly lower than the district average (2.7 km), but higher than the Saxony average (1.8 km) and the Saxony minimum of 0.6 km.

In Altenberg, 50% of buildings are 28.3 km from the nearest hospital, significantly higher than the district average (8.3 km), the Saxony average (6.8 km), and close to the Saxony maximum (28.7 km). The distance to the nearest care home for 50% of buildings is 7.0 km, more than double the district average (2.7 km), significantly higher than the Saxony average (1.8 km), and below the Saxony maximum (13.2 km).

In Glashütte, 50% of buildings are 5.4 km from the nearest care home, which is double the district average (2.7 km), significantly higher than the Saxony average (1.8 km), and below the Saxony maximum of 13.2 km, highlighting less favorable local access to elderly care facilities.[168]

In Liebstadt, 50% of buildings are 16.8 km from the nearest hospital, which is higher than the district average (8.3 km), the Saxony average (6.8 km), and below the Saxony maximum (28.7 km). The distance to the nearest care home for 50% of buildings is 8.9 km, more than three times the district average (2.7 km), significantly higher than the Saxony average (1.8 km), and below the Saxony maximum of 13.2 km.

As part of the ESIA baseline stage, more information about the health status of the population in the Direct Socioeconomic and Health AoI will be collected. This will include information on the top causes of death, main communicable and non-communicable diseases, quality of life (prevalence of obesity, use of alcohol and illicit drugs), road accidents. Such information will be collected from interviews with local health facility representatives and emergency response institutions, as available.

Czech Republic

Basic health care in the Ústecký Region is provided by a network of outpatient care establishments and pharmacies. Medical care is provided in 18 hospitals with 5,328 beds. The most important health care establishment in the Region is Krajská zdravotní, which has associated hospitals in Děčín, in Ústí nad Labem, in Teplice, in Most, and in Chomutov districts. The follow-up care and physiotherapeutic care are provided in seven specialised therapeutic institutions with 691 beds.[169]

The closest medical facility to Cínovec, which can provide emergency services, is located in Teplice district, approximately 15 km south.

[167] Source: Rathaus Altenberg, retrieved from: https://www.rathaus-altenberg.de/aerzte/, accessed in January 2025.
[168] Source: Statistic Saxony, retrieved from: https://www.statistik.sachsen.de/download/regional/statistik-sachsen_sbe_gemeinde_glashuette-stadt-14628130.pdf, accessed in January 2025.
[169] Source: Cezch Statistical Office. Statistical Yearbook of the Ústecký Region 2023, retrieved from: https://csu.gov.cz/docs/107508/46e35c1a-3c13-e62a-19dd-38c02adf6db5/33008523.pdf?version=1.0, accessed in March 2025

8.3.7.5 GENDER BASED VIOLENCE

The International Labor Organization (ILO) Violence and Harassment Convention 190 (2019) describes violence and harassment as referring to "*in the world of work*[170]*, a range of unacceptable behaviours and practices, or threats thereof, whether a single occurrence or repeated, that aim at, result in, or are likely to result in physical, psychological, sexual or economic harm*". It then affirms that the term "violence and harassment" includes GBVH, which is defined as "*violence and harassment directed at persons because of their sex or gender, or affecting persons of a particular sex or gender disproportionately*". In Convention 190 the term GBVH explicitly includes "sexual harassment", which generally covers a range of behaviours, both sexualized and non-sexualized[171]. The Federal Republic of Germany ratified this Convention in 2023.

Violence and harassment (V&H) is an issue that affects a vast number of workplaces throughout all countries of the world. There is growing evidence that no individual, no enterprise, no sector and no society can claim to be entirely free from V&H. More than one in five persons in employment have experienced it during their working life, according to a 2022 ILO global survey[172]. This phenomenon is not confined to a specific workplace (office, workstation, factory, retail) but can occur when commuting to or from work, in the digital space through work-related communications, during work-related trips, events or social activities, and in home-based offices. Psychological V&H was the most reported form of V&H at work. Particularly affected groups included young people, women migrant workers, wage-earning and salaried women (more than self-employed women), and people who had experienced some form of discrimination, while women were particularly exposed to sexual harassment and violence at work. The study also found that only half of victims worldwide had disclosed their experiences to someone else; thinking it was "a waste of time" and "fear for their reputation" were the most frequently reported reasons for not disclosing incident(s).

Cultural and traditional gender roles may also be a contributing factor. GBVH is particularly relevant to private sector companies when it occurs within its workforce (including the supply chain), between workers and community members (including workers' family members).

[170] World of work: A broad concept that takes account of work occurrences beyond the physical workplace. Convention No. 190 specifies that it applies to violence and harassment in the world of work occurring in the course of, linked with or arising out of work: (a) in the workplace, including public and private spaces where they are a place of work; (b) in places where the worker is paid, takes a rest break or a meal, or uses sanitary, washing and changing facilities; (c) during work-related trips, travel, training, events or social activities; (d) through work-related communications, including those enabled by information and communication technologies; (e) in employer-provided accommodation; and (f) when commuting to and from work (Article 3). Moreover, the term covers not only workers but also other persons in the world of work, including (for instance) persons working irrespective of their contractual status, and in all sectors in both the formal and the informal economy. Source: ILO. 2024. *Preventing and addressing violence and harassment in the world of work through occupational safety and health measures*. Available at https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40dgreports/%40inst/documents/publication/wcms_908897.pdf and retrieved on 14 January 2025

[171] *reventing and addressing violence and harassment in the world of work through occupational safety and health measures*. Retrieved on 14 January 2025 from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40dgreports/%40inst/documents/publication/wcms_908897.pdf

[172] ILO. 2022. *Experiences of Violence and Harassment at Work: A Global First Survey*

GBVH may take the form of harassment (at work or outside the workplace), verbal or non-verbal abuse, reduced access to employment or promotion opportunities, and exposure to harm (or threats/fear of harm).

Sexual and partner violence against women is a widespread human rights violation in Germany with a significant underreporting rate.[173] According to a 2014 study by the European Union Agency for Fundamental Rights, around 35% of all women experience physical and/or sexual violence at least once in their lifetime. However, only about 20% of those affected seek support from available counselling and assistance services.[174] Over the last 10 years, the number of consultations to the helpline "Violence Against Women" has significantly increased. In 2014, there were approximately 25,000 consultations, while in 2023, this number rose to around 59,000, reflecting a substantial rise in demand for support services.[175] According to the limited larger studies conducted in Germany, it is reported that approximately one in four women experiences physical or sexual violence by a partner or ex-partner during their lifetime, and almost one in seven women is forced into sexual acts. Women are also much more likely to be affected by stalking than men. The perpetrators are mostly male, often partners or ex-partners of the victims.[176]

In Czech Republic, women represent the majority of victims of intimate partner violence recorded by police (90 % in 2023). In 2023, police recorded 596 women victims of violence committed by an intimate partner. During the year, police recorded a greater number of offences of intimate partner violence against women victims (604). Physical violence is the most common form of intimate partner violence and domestic violence recorded by police.[177] Findings from the EU survey on gender-based violence, published in 2025, show that 34 % of ever-partnered women in Czech Republic have experienced psychological violence, physical violence (including threats), or sexual violence by an intimate partner in their lifetime.[178] Furthermore, available data indicates that 13% of women and 4% of men experience serious forms of sexual harassment in the workplace[179].

Major development projects that require significant construction workforces, particularly in male dominated industry sectors such as mining, are associated with increased risks of gender-based violence and harassment which can occur within the workforce or between the workforce and local communities.

[173] Source: EIGE, retrieved from: 2016.5472_mh0416658enn_pdfweb_20170215100607.pdf, accessed in March 2025.
[174] Source: Helpline, retrieved from:
[175] Source: Helpline, 2023 annual report, retrieved from: https://www.hilfetelefon.de/das-hilfetelefon/zahlen-und-fakten/jahresbericht.html, accessed in March 2025.
[176] Source: Viktimisierungsstudie Sachsen (VisSa), retrieved from: https://www.hs-merseburg.de/fileadmin/Allgemein/Aktuelles/2023/VisSa_Studie__2_.pdf, accessed in January 2025.
[177] Source: European Institute for Gender Equality (EIGE), retrieved from: https://eige.europa.eu/gender-based-violence/countries/Czech Republic?language_content_entity=en, accessed in March 2025.
[178] Source: Eurostat. *Ever-partnered women who have experienced violence by an intimate partner, by type of violence*. Retrieved from: https://ec.europa.eu/eurostat/databrowser/view/gbv_ipv_type/default/table?lang=en&category=livcon.gbv.gbv_ipv, accessed in March 2025.
[179] Source: CMS. *Regulations on sexual harassment in the workplace in Czech Republic.* Retrieved from: https://cms.law/en/int/expert-guides/cms-expert-guide-on-sexual-harassment-in-the-workplace/czech-republic accessed in March 2025.

8.3.7.6 PUBLIC SAFETY AND SECURITY

The security situation in the Eastern Ore Mountains District saw a significant rise in crime in 2022, with 15,048 offenses recorded. Out of these, one third were in migration-related violations.[180]

Based on the data from the Saxon Switzerland-Eastern Ore Mountains District for 2022, the crime rates vary across municipalities, with Altenberg and Bad Gottleuba-Berggiesßübel showing significantly higher crime rates compared to others in the region. [181]

For Altenberg, the reported number of crimes per 100,000 inhabitants is 8,687, with notable figures in areas such as theft (52 incidents) and violent crimes (144 incidents). The city's total crime count reached 678.

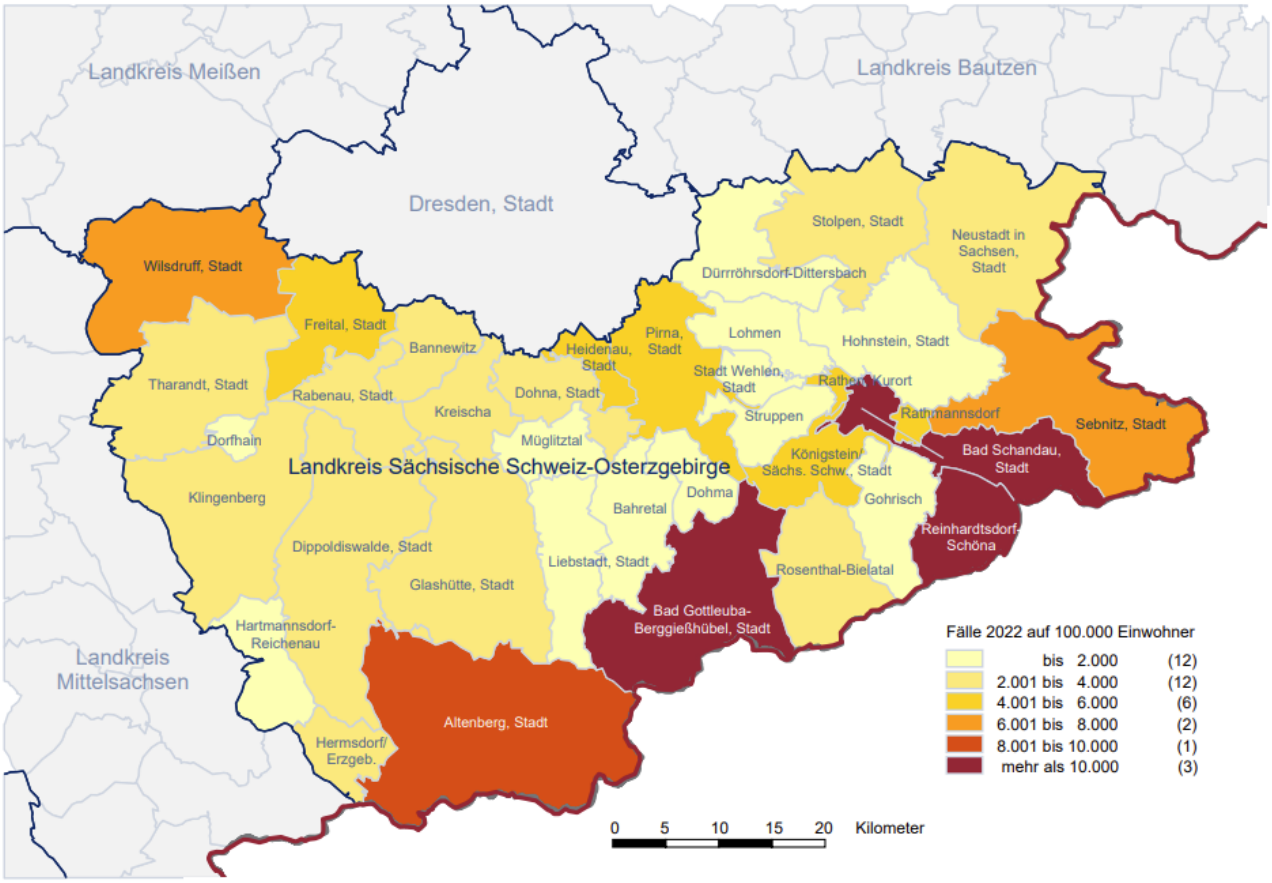
On the other hand, Bad Gottleuba-Berggiesßübel experienced a substantially higher crime rate of 45,543 per 100,000 inhabitants, with a total of 524 total crimes reported. This municipality saw high numbers in property crimes (such as theft under the category of property offenses, with 125 incidents) and crimes against personal freedom, likely influenced by various urban or socioeconomic factors. This rate could be reflective of the area's larger population density or specific crime trends like theft and property damage.

Other municipalities outside the Direct Socioeconomic and Health AoI, such as Pirna (2,060 total crimes) and Freital (1,726 total crimes), also experienced significant numbers of crimes committed, though not as high as Bad Gottleuba-Berggiesßübel. This may suggest that certain municipalities within the region, particularly Bad Gottleuba-Berggiesßübel, face more pronounced challenges with regards to preventing or responding to crime.

Figure 11 shows the crime rates in 2022, for the Eastern Ore Mountains District and its municipalities, as well as municipalities located in the Project's Direct Socioeconomic and Health AoI, Altenberg ranged between 8,001 and 10,000 incidents, while Bad Gottleuba-Berggiesßübel reported more than 10,000 incidents.[182]

[180] Source: Verlagsportal.de, retrieved from: Anstieg der Kriminalitätsrate - Landkreis Sächsische Schweiz-Osterzgebirge - Monschau Test, accessed in January 2025.
[181] Polizei Sachsen, retrieved from: Kriminalitätsbelastung nach Gemeinden, accessed in January 2025.
[182] Polizei Sachsen, retrieved from: Kriminalitätsbelastung nach Gemeinden, accessed in January 2025.

FIGURE 11 CRIME RATES IN THE EASTERN ORE MOUNTAIN DISTRICT



Source: Polizei Sachsen, retrieved from: https://www.polizei.sachsen.de/de/dokumente/Landesportal/Atlas22XKrimiBelastgXnachXGemeinden.pdf

There are mixed impressions about the mining project in the Direct AoI. Discussions regarding the Zinnwald lithium mining project in the Osterzgebirge have considered the potential environmental and social risks posed by the initiative. During a November 2024 event, various stakeholders, including local initiatives and environmental organisations, voiced some levels of opposition to the Project. Main concerns raised referred to the potential negative impacts on biodiversity, UNESCO heritage sites, and the region's water resources. Other concerns conveyed by the public refer to potential impacts on residents' boreholes, and potential visual, noise and dust impacts from the TSF and processing plant.[183] This reflects the ongoing dialogue between the community and authorities, with efforts to balance economic opportunities with environmental preservation.

In the Czech Republic, according to data available for 2022, Teplice district ranked 5th out of 7 districts, with 2,491 registered criminal offences out of a total of 16,365 cases per 1,000 population at the regional level.[184] Of the 2,491 criminal offences, 77% were registered as general crime, followed by 11% classified as economic crime. Other crimes registered referred to robberies, burglaries in dwellings and family houses, rapes and one murder case. In terms

[183] Source: Bärenstein, retrieved from: https://baerenstein.org/, accessed in January 2025.
[184] Source: Cezch Statistical Office. *Statistical Yearbook of the Ústecký Region – 2023*, retrieved from https://csu.gov.cz/produkty/statistical-yearbook-of-the-ustecky-region-2023 accessed in March 2025

of cases of rape, Teplice district ranked 3rd out of 7 with 15 cases out of the overall 93 cases registered in the region.

8.4 ANNEX D. HUMAN RIGHTS SCREENING

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
Labor	Child Labor	ILO standards prohibit hazardous work for all persons under 18 years. They also prohibit labour for those under 15, with limited exceptions for developing countries	Yes	No	The country has implemented specific measures on the prohibition of child and forced labour. The minimum age for employment is 15 and as such in line with the ILO Minimum Age Convention (No.139). On June 11, 2021, the Parliament adopted a new law on supply chains requiring large companies to identify and address human rights and environmental risks in their direct supply chains, including forced labour and child labour. The law only applies to companies with more than 3,000 employees beginning in 2023, and to companies with more than 1,000 employees from 2024. The Company Employment and Human Rights Policy prohibits forced and underage labour.	Low
	Collective Bargaining/ Right to Freedom of Association	Collective bargaining: Individuals have the right to form or join trade unions of their choice. Trade unions must be permitted to function freely, subject only to limitations that are in line with international Human Rights standards. Workers have the right to strike, in conformity with reasonable legal requirements. These exist in order to promote negotiation between organized workers and their employer or employers to determine wages, hours, rules, and working conditions. Freedom of Association: Protects the right to form or join all types of associations, including political, religious, sporting/recreational, non-governmental, and trade union associations. This freedom of individuals to associate can be an end in and of itself, or as a means of pursuing common objectives.	Yes	No	The Constitution, federal legislation, and government regulations provide for the right of employees to form and join independent unions, bargain collectively, and conduct legal strikes.	Low
	Modern Slavery	Slavery exists when one human effectively owns another. Freedom from servitude covers other forms of severe economic exploitation or degradation, such as in the trafficking of workers or debt bondage. Rights to freedom from slavery and servitude are absolute rights. Forced or compulsory labour is defined by the ILO as all work or service that is extracted under menace of any penalty and for which the person has not voluntarily offered themselves. Providing payment does not mean that work is not forced labour if the other aspects of the definition are met.	Yes	No	The Constitution and federal law prohibit all forms of forced or compulsory labour. Violations are punished by imprisonment. There are cases of forced labour mostly among migrants who are employed in unregulated and unskilled sectors. Forced labour exploitation takes place in domestic work due to the hidden nature of this sector, as well as in more closely regulated industries such as construction, agriculture, meat processing, hospitality, retail, transport, and logistics, as well as industrial plants. Germany has one of the lowest levels of modern slavery, ranked at 158/160 countries with a prevalence rate of 0.6 (approximately 47,000 people). Germany is also ranked among one of the countries with the most government response actions to modern slavery, with a response score of 61.5%.[185]	Low

[185] Source: Walk Free, "Global Slavery Index", retrieved from https://www.walkfree.org/global-slavery-index/, accessed in August 2023.

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
	Grievance Mechanism and Remedy	All people have the right to remedy when their rights have been violated. Where business enterprises identify that they have caused or contributed to adverse Human Rights impacts, they should provide for or cooperate in their remediation through legitimate processes, whether through the company's own operational-level grievance mechanism or through cooperation with independent (non)judicial mechanisms	Yes	Yes	This risk refers to insufficient access to remedy or ineffective management of grievances from community rights-holders affected by ZLG's activities. The Project has defined channels for reporting grievances by the local communities and has developed a community grievance mechanism as part of the Stakeholder Engagement Plan (SEP). At this early stage of the Project it is however not possible to evaluate the effectiveness of the grievance mechanism and this will need to be further assessed as the project continues to engage relevant stakeholders. Legislation on whistleblower protection has been adopted. In 2022, 76.7% of corruption investigations were initiated on the basis of external information and public disclosures[186], pointing to the need for horizontal whistleblower protection. For workers, the Company has a Whistleblower Policy. Similarly, the way in which it is cascaded down to workers and contractors has not been part of the assessment of the risk at this early stage. This will need to be considered as the Project progresses. This risk also refers to the conditions that may prevent community rights-holders from voicing their concerns or opinions about the Project, which could include protesting, expressing or organising opposition. In Germany, the right to freedom of assembly is prominently enshrined in the constitution and the Federal Constitutional Court has repeatedly emphasized its importance. Since 2006, legislation on assemblies is adopted at the state level (German Länder).[187] In 2023, the Saxony state government presented a draft amendment to the Saxony Assembly Act. It was due to come into force in the German State of Saxony on September 01, 2024. The act has been widely criticised by several civil rights society groups. Protests were organised in June 2024 claiming that the act introduces unconstitutional restrictions on the right of citizens in Saxony to demonstrate which is enshrined in the Basic Law of the Federal Republic of Germany constitution.[188]	Medium
	Job Security/Right to Work	The termination of an employment relationship is likely to be a traumatic experience for a worker and the loss of income has a direct impact on her or his family's well-being. As more countries seek employment flexibility and globalization destabilizes traditional employment patterns, more workers are likely to face involuntary termination of employment at some point in their professional lifetime. The employment of a worker should not be terminated unless there is a valid reason for such termination connected with the worker's capacity or conduct or based on the operational requirements of the undertaking, establishment, or service. Even where such practice may be legally permissible under local law, many stakeholders now expect companies to exhibit a higher standard of behaviour in line	Yes	No	There generally is not a significant human rights risk associated with job security and the right to work for German citizens and legally residing residents. Germany has strong labour laws and a robust social safety net that protect workers' rights, including the right to fair employment, equal pay for equal work, and protection against discrimination and unfair dismissal. The country also has a well-established system of social welfare, unemployment benefits, and vocational training programs to support individuals during periods of unemployment or job transitions. However, challenges related to job security and the right to work can still exist for certain vulnerable groups, such as refugees and migrants, who may face obstacles in accessing the labour market and job security due to legal restrictions and discrimination.	Low

[186] Source: European Commission. 2023. 2023 Rule of Law Report. Country Chapter on the rue of law situation in Germany. Available at https://commission.europa.eu/system/files/2023-07/16_1_52572_coun_chap_germany_en.pdf and accessed on 26 February 2025
[187] Source: Amnesty International. 2023. Protect the Protest: Freedom of the Right to Peaceful Assembly under Pressure in Germany. Accessed from Amnesty Public Statement on 26 February 2025
[188] Source: Germany: Saxony state government moves to further restrict democratic rights - World Socialist Web Site, accessed on 26 February 2025

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
		with international standards and good practice.				
	Non-discrimination	The practice of ensuring equal treatment and respect for all individuals regardless of class, race, colour, sex, religion, gender, age, political or other opinion, national or social origin, property, sexual orientation, disability, employee status, marital status, familial connection, etc. Includes ensuring employees are free from harassment.	Yes	No	The law prohibits discrimination in all areas of occupation and employment, from recruitment, self-employment, and promotions. Although origin and citizenship are not explicitly listed as grounds of discrimination in the law, victims of such discrimination have other means to assert legal claims. The law obliges employers to protect employees from discrimination at work. The law provides for equal pay for equal work. However, despite these legal and institutional frameworks, challenges related to discrimination persist in practice. In 2023, the Independent Federal Anti-Discrimination Agency said it received 8,827 requests for advice in 2022, an increase of 14 percent over 2021 and 50 percent over 2019. Of all complaints, 43 percent related to racial discrimination, 27 percent to disability-based discrimination, 21 percent to gender-based discrimination, and 10 percent to age discrimination. Most people seeking advice experienced discrimination in the labour market (27%).[189]	Medium
	Occupational Health and Safety	A company should provide safe and healthy working conditions to workers. ILO standards require governments to adopt, in consultation with appropriate employer and employee organizations, a national occupational health and safety ("OHS") policy aimed at reducing accidents and injuries to health arising in the course of employment, and to minimize the causes of inherent workplace hazards. That policy should address, for example, the provision of adequate OHS training regarding the use and maintenance of the 'material elements of work', including workplace environment, tools, machinery and equipment. Workers must be able to remove themselves from work situations where imminent and serious health dangers are reasonably perceived, without undue consequences (intersects with the right to enjoy just and favorable conditions of work).	Yes	No	Occupational health and safety provisions, including those in the drilling sector, are stringent and well-implemented. Companies engaged in drilling operations are subject to comprehensive regulations and guidelines designed to protect the safety and health of workers. These provisions encompass rigorous risk assessments, mandatory safety training, and the provision of appropriate personal protective equipment. Regular inspections by authorities ensure compliance, and companies are held accountable for safety violations. Additionally, Germany's social accident insurance system provides crucial support in case of work-related accidents or illnesses. The Company Also has an Occupational Health and Safety Policy. Nevertheless, there is still the potential for occupational health and safety incidents to occur which could have severe negative consequences for workers and their families.	Medium
	Wages	A company must protect the right to remuneration that provides workers with fair wages and equal remuneration for work of equal value. Remuneration must also be enough to provide workers with a decent living for themselves and their families. A minimum wage should be 'fair' and enable families to enjoy the right to a standard of living that includes adequate food, clothing and	Yes	No	Since 1 January 2015, Germany has a general statutory minimum wage established by law that is adjusted annually. The minimum wage rose to 12.82 EUR per hour on January 1, 2025. In addition to the statutory minimum wage, which applies in principle to all sectors and regions, there are also higher sector-specific minimum wages. The law provides also for equal pay at work. In January 2023, the Federal Statistical Office found the gross hourly wages of women in 2022 were on average 18% lower than those of men, and 7% percent lower for women even when factors such as qualifications, responsibilities and employment biographies were equivalent. It attributed pay differences primarily to the different sectors in which men and women were employed and to unequal requirements for leadership experience and other qualifications. The Federal Anti-Discrimination Agency (FADA) reported women were also at a disadvantage regarding promotions, often due to career interruptions for child rearing.[190]	Medium

[189] Source: Human Rights Watch. Germany, Events of 2023. Accessed from https://www.hrw.org/world-report/2024/country-chapters/germany#c3ba32 on 26 February 2025
[190] Source: United States Department of State. Germany 2023 Human Rights Report. Accessed from https://www.state.gov/wp-content/uploads/2024/02/528267-GERMANY-2023-HUMAN-RIGHTS-REPORT.pdf on 26 February 2025

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
		housing (connects with the right to adequate standard of living for health and well-being).				
	Working Hours	The degree of flexibility for employees to start and end the workday in order to manage familial and personal obligations, while adequately fulfilling their employment duties.	Yes	No	The law covers all employees except for managerial staff. Federal regulations set the standard workday at 8 hours, with a maximum of 10 hours, and limit the average workweek to 48 hours. For the 54% of employees who are directly covered by collective bargaining agreements, the average agreed working week under existing agreements is 37.7 hours. The law requires a break after no more than 6 hours of work, stipulates regular breaks totalling at least 30 minutes, and sets a minimum of 24 days of paid annual leave in addition to official holidays. At the Project level, staff working in the drilling operations, however, face longer working hours of 12-hour-shifts, to reduce handovers and increase safety provisions.	Medium
Civil and Political	Freedom of expression	The right to hold opinions free from outside interference is an absolute right, with narrow restrictions by States only permissible when in line with international Human Rights standards. Individuals have a right to seek, receive and impart ideas in whatever media or form they choose.	Yes	Yes	Germany places a strong emphasis on protecting the civil and political right to freedom of expression, both in law and practice. Legally, this right is enshrined in the German Basic Law, specifically in Article 5, which guarantees freedom of speech, the press, and artistic expression. While this freedom is not absolute and can be subject to limitations, such as in cases involving hate speech or incitement to violence, any restrictions must be proportionate and justified. In practice, Germany upholds these principles through a robust legal framework, a diverse media landscape, and an independent judiciary. There is a vibrant culture of public debate, investigative journalism, and artistic expression. However, like any country, challenges exist, including concerns about online hate speech and disinformation. Nevertheless, Germany's commitment to protecting freedom of expression remains a cornerstone of its democratic values.	Low
	Right to life and security of person	Individuals have the right not to be deprived of life arbitrarily or unlawfully. This includes the right to have one’s life protected, for example, from physical attacks or health and safety risks.	Yes	Yes	The right to life and security of person is well-protected both in law and practice. Legally, this right is upheld through various provisions in the German Basic Law, ensuring that every individual's life and personal security are inviolable. Law enforcement agencies are subject to strict legal oversight, and the use of force is tightly regulated. The judiciary plays a crucial role in upholding this right by ensuring accountability in cases of violations. In practice, Germany maintains a low crime rate and a strong law enforcement system, contributing to a generally safe and secure environment.	Low
	Privacy	Individuals have a right to be protected from arbitrary, unreasonable, or unlawful interference with their privacy, family, home or correspondence and from attacks on their reputation. The State is allowed to authorize restrictions on privacy in line with international Human Rights standards, but ‘arbitrary’ restrictions are always prohibited.	Yes	Yes	Article 2 of the German Basic Law guarantees the right to personal freedom and privacy. The country has stringent data protection laws, including the General Data Protection Regulation which governs the collection and use of personal data. The Federal Constitutional Court has consistently upheld the right to privacy as fundamental, with strict criteria for any infringements. In practice, Germany has a robust culture of data protection and privacy awareness, and citizens are generally vigilant about their rights. Data breaches are taken seriously, and individuals have the right to access and control their personal information.	Low
Economic, Social and Cultural	Right to education	All children have the right to free and compulsory primary education. The right also includes equal access to education and equal enjoyment of educational facilities, among other aspects.	Yes	Yes	The right to education is enshrined in the German Basic Law, emphasizing that every individual has the right to education, with primary and secondary education being compulsory and provided free of charge. Germany's federal system ensures that education is primarily a responsibility of its 16 states resulting in a high degree of regional autonomy. This allows for tailored education programs and resources while still adhering to fundamental standards set by federal law. In practice, Germany maintains a high-quality education system with a strong emphasis on equal access and opportunities. There are comprehensive support structures in place to ensure that all students, including those with disabilities or from disadvantaged backgrounds, have access to quality education.	Low
	Right to health	Individuals have a right to the highest attainable standard of physical and mental health. This includes the right to have control over one’s health and body, and freedom from interference.	Yes	Yes	The country's legal framework ensures access to healthcare as a fundamental right, with the German Basic Law recognizing the inviolable right to human dignity, which includes access to healthcare services. Germany operates a universal healthcare system, which provides comprehensive medical care to all residents, financed through a combination of employer and employee contributions. This system guarantees equal access to healthcare services, including preventive care, treatment, and medications. There is an extensive network of hospitals, clinics, and medical professionals in the country.	Low
	Right to participate in the cultural life	Individuals have a right to take part in the cultural life of society and enjoy the benefits	No	Yes	Schools and other social and cultural facilities are accessible to the community in Germany. Every individual has the right to education, with primary and secondary education being compulsory and provided free of charge.	Low

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
	of the community	of scientific progress, especially disadvantaged groups.				
	Right to Water	Individuals have the right to water and sanitation	Yes	Yes	Access to safe water and adequate sanitation in Germany is universal. More than 99 percent of users are connected to a public water supply system. The quality of drinking water in Germany is good or very good. It is regularly monitored at short intervals and complies with the stringent quality requirements of the Drinking Water Ordinance.[191]	Low
	Social insurance	This right obliges the State to create and maintain a system of social security that provides adequate benefits for a range of issues (such as injury or unemployment).	Yes	No	German citizens are covered by the so-called social insurance system that assists them in emergency situations which include illness, unemployment, old age and need for nursing care. The contributions to the system are dependent upon one's income.	Low
Group Rights/ 'Heightened Risk of Vulnerability'	Children's Rights	The Convention on the Rights of the Child establishes global standards to ensure the protection, survival, and development of all children, without discrimination.	Yes	Yes	In Germany children have all the same basic rights as adults but are also considered to be in need of special protection. Germany is a signatory state to the United Nations Declaration on the Rights of the Child and submits regular reports on trends in children's rights in the Federal Republic of Germany to the United Nations Committee on the Rights of the Child. Article 6 (2) of the Basic Law is to be extended to include the following: "The constitutional rights of children, including their right to develop as responsible individuals must be respected and protected. Children's best interests must be taken into account in an appropriate manner. The constitutional entitlement of children to a fair hearing in front of the law must be ensured. The primary responsibility of parents shall remain unaffected."	Low
	Disability Rights	The Convention on the Rights of Persons with Disabilities promotes global standards intended to protect the rights and dignity of people with disabilities in and outside of the workplace.	Yes	No	The Disability Equality Act safeguards those with disabilities from further discrimination and public authorities are expected to protect this right. The Act does not distinguish discrepancies or protections for those with sensory or intellectual disabilities as it is more of a general umbrella of protection for all disabled persons. [192] In practice persons with disabilities faced additional hurdles in finding employment and housing; unemployment amongst disabled persons of working age is notably higher than the average individual. Often there are not enough suitable positions for those with disabilities, despite formal requirements for private sector companies to employ at least 20 people with a disability; many will accept monetary fines rather than employing disabled persons.	Low
	Indigenous Peoples	Indigenous Peoples are afforded unique group rights under international law that permits them to give or withhold their consent to projects that may impact them under certain scenarios.	No	Yes	There are no indigenous people affected within the Project AoI.	Low
	Migrant Workers	The International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families establishes how migrant workers, and their families should be protected.	Yes	No	Despite the high standards regarding labour rights as stipulated by German laws, migrants have considerable problems when they attempt to enforce these rights. Illegal migrants living in Germany frequently face exploitative working conditions with virtually no way of accessing state help. This is seen most strikingly in the employment conditions of construction workers, in the sex trade, and in private households, which predominantly employ women as domestic help and carers of children or elderly persons. In jobs like these, illegal migrants are sometimes cheated of their wages or paid only a fraction of what they are due. They may also be forced to work under unacceptable conditions. The German government rejects ratification of the United Nations Convention on the Protection of the Rights of all Migrant Workers and their Family Members, because of fears that the convention would place excessive restrictions on the Government's migration and employment policies. Also, the European Convention on the Legal Status of Migrant Workers has been signed in 1977 with reservations but has not yet been ratified. Additionally, the sixteenth Human Rights Report by the German Government refers to exploitative working conditions faced by many migrant workers in Germany. This includes issues such as underpayment, excessive working hours, and inadequate living conditions.[193]	Medium

[191] Source: Federal ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, "Drinking Water", retrieved from: BMUV: Drinking water, last accessed August 2023.
[192] Source: Disability Equality Act, retrieved from: BGG - Gesetz zur Gleichstellung von Menschen mit Behinderungen (gesetze-im-internet.de), accessed in August 2023.
[193] Source: Federal Foreign Office. Sixteenth Human Rights Report covering the period from 1 October 2022 to 30 September 2024. Accessed from https://www.auswaertiges-amt.de/resource/blob/2691024/a5ff6a3540e4a1d056b4d84a0c6ea371/241218-mrb-16-pdf-data.pdf on 26 February 2025

Rights Category	Human Rights Issue	International Standard	Risk to workers	Risk to community	Comment/ Potential Negative Impact	Potential Context Risk Level (High/Medium/Low)
[redacted]	Women's Rights	The Convention on the Elimination of all Forms of Discrimination Against Women exists to promote women's rights and their protection.	Yes	Yes	Women's rights are enshrined in the basic law and federal law. Nevertheless, inequality of opportunities is evident in the field of business and politics. The leadership positions law introduces a women's quota by requiring larger private and public companies to increase the proportion of women in their supervisory committees, boards of directors and senior management positions. Expecting mothers are legally protected from being discriminated against when applying for jobs and protection from being dismissed from work as a result of their pregnancy. There is however, still a pay gap between men and women in Germany. Also refer to the Section on Wages. Sexual and domestic violence, and international trafficking of women are among other critical issues. Social service NGOs and shelter operators indicated there was a shortfall in accommodation in shelters for approximately 15,000 women nationwide in 2023. According to a March 2023 report by the media outlet Correctiv, occupancy was at 83% nationwide and there were no open shelter spaces on 303 days of 2022. The NGO Central Information Agency of Autonomous Women's Shelters stated refugee women were at particular risk of domestic violence because they were required to maintain residence in a single district for three years, had few financial resources, and often resided in districts without women's shelters.[194]	Medium

[194] Source: United States Department of State. Germany 2023 Human Rights Report. Accessed from https://www.state.gov/wp-content/uploads/2024/02/528267-GERMANY-2023-HUMAN-RIGHTS-REPORT.pdf on 26 February 2025

8.5 ANNEX E. SCOPING MATRIX

The potential interactions between the Project and the resources and receptors are analyzed during the Scoping process using a modified Leopold matrix approach. The matrix displays the key Project activities (through the relevant life cycle) against resources/receptors and allows a methodical identification of the potential interactions each Project activity may have on the range of resources/receptors within the Project AoI.

The colour code used to display the results of the analysis performed is summarized in Table 21.

TABLE 21 SCOPING EVALUATION CRITERIA

Colour	Description	Scope in/out
(white)	No interaction is reasonably expected	Aspect "scoped out"
I	An interaction is reasonably possible, but none of the resulting impacts are likely to lead to significant effects.	Aspect "scoped out", but rationale is provided in the relevant section of current report.
S	An interaction is reasonably possible and at least one of the resulting impacts is likely to lead to a (negative) effect that is significant. NB also indicates significant data-gaps (to be identified in the comments)	"Scoped in" – subject to impact assessment.
P	Denotes a positive interaction	"Scoped in" – subject to impact assessment.

In summary:

- Interactions that are coloured **white** are 'scoped out' of further consideration in the impact assessment process, and no discussion is warranted in the ESIA report to support the decision (owing to the obvious basis for identifying no potential interaction).
- Interactions that are coloured **yellow** are also 'scoped out', but during the impact assessment process, these potential interactions will be reviewed to confirm that resulted impacts are not significant and/or are appropriately addressed through one or more embedded controls such as obligatory air filters on equipment or bunding of liquid containers in compliance with local regulations and international good practices.
- Interactions marked with **orange** and **green** are subject to impact assessment as part of the ESIA process.

8.5.1 TECHNICAL SCOPE

The range of environmental and social topics to be addressed in the ESIA is referred to as the technical scope and is summarised in the scoping Matrix tables.

The Scoping Matrix developed as part of this scoping report is included in Table 22 to Table 25. It gives an overview of the expected environmental and social impacts associated with the Project and additional information to the interactions, which shall be taken forward to the main body of the ESIA.

The scoping exercise is an ongoing process and should go throughout the ESIA implementation. Since the Project is completing the pre-feasibility stage, detailed Project documentation and final design solutions are not yet available, this matrix has been developed based on both general information provided by Zinnwald and assumptions and alternatives based on ERM experience in mining Projects in Germany. As new information becomes available (e.g., about the Project activities, the receptors, impact interactions, or other factors), items that were previously considered of little or no relevance and therefore scoped out may subsequently be scoped in (or also vice-versa).

The evaluation of impacts for unplanned and accidental events considers the likelihood of the event occurring when determining the magnitude of the impact. Likelihood is determined as unlikely, possible, or likely based on professional judgement and quantitative information (e.g., statistical frequency) where available.

Interactions between Project activities and components that are scoped in will form the technical scope of the ESIA. It should be emphasized that the scoping out of environmental and social issues related to project activities is reversible. If, as the Project Design develops, it becomes apparent that a specific impact may arise in relation to a matter previously scoped out, the environmental or social issue in question will be readmitted to the ESIA, as appropriate.

The range of environmental and social topics to be addressed in the ESIA is referred to as the technical scope. An assessment will be undertaken by specialists for each of the environmental and social topics that have been 'scoped in' to the ESIA.

8.5.2 SPATIAL SCOPE

The spatial, or geographical, scope of the assessment considers the following factors:

- the physical extent of the proposed works, as defined by the Project design.
- the nature of the baseline environment and the way the impacts are likely to be propagated; and
- the pattern of governmental administrative boundaries, which provide the planning and policy context for the project.

Construction and operation activities that may lead to potential impacts on sensitive receptors are scoped in as part of determining the technical scope as discussed in the previous paragraph.

The **spatial scope** for each topic area has been explained as buffers around the Project components, which are the potential sources of impact. A composite of these buffers then forms the overall spatial scope of the impact assessment. Appropriate area of influences will be considered for each environmental and social topic based on the receptors affected.

Therefore, it is important to define the AoI during this scoping process. This varies depending on the potential impact being considered. The spatial scope includes all areas within which potentially significant impacts may occur.

The spatial scope for each topic area has been illustrated as buffers around the Project components, which are the potential sources of impact. A combination of these buffers then forms the overall spatial scope of the impact assessment.

8.5.3 TEMPORAL SCOPE

The temporal scope of the ESIA generally refers to the time periods over which impacts may be experienced. This is established for each technical topic, where appropriate, through discussion with the relevant statutory consultees. In general, the following terms will be considered:

- Short-term, when the impact is temporary and lasts for up to 12 months.
- Medium-term, when the impact lasts for in the region of 2 to 3 years (e.g., for the whole period of construction or for the initial period of operation); and
- Long-term, when the effect remains for a substantial period, perhaps permanently.

For the purposes of the impact assessment, the Project has been divided into four phases: pre-construction, construction, operation, and closure.

TABLE 22 SCOPING MATRIX (PRE – CONSTRUCTION & CONSTRUCTION – PHYSICAL AND BIOLOGICAL ENVIRONMENT)

	Physical Environment						Biological Environment						
	Air	Noise	Land and Waste		Water		Ecosystems & Habitats			Flora		Fauna	
	Pollutants, Particulate, Odour	Noise and Vibration	Geology and Soils	Soil Contamination	Hydrogeology	Hydrology	Relevant Habitats	Ecological Connectivity	Protected Areas / Internationally Recogn. Areas	Relevant *Taxa*	Invasive Sp.	Relevant *Taxa*	Invasive Sp.
Project Design and Site Preparation													
Land Acquisition (temp. and perm.)													
Land Clearance and internal road construction	S	S	S		S	S	S	IS	S	S	S	S	I
Worker mobilisation	I	S									S	S	I
Construction													
Production facilities and infrastructure													
Ground works	S	S	S		S	S	S	S	S	IS	S	S	
Worker and equipment mobilisation	S	S				S	IS	I	S	I	S	S	I
Maintenance of construction camps facilities	I								I		I	I	I
Groundwater/Surface water extraction					S	S	IS		IS	I		IS	
Waste management	S		S		S	S	IS		I	I	I	I	I
Access Roads													
Ground works / Clearing	S	S	S		S	S	S	S	S	S	S		
Road construction	S	S	S		S	S	S	S	S	I	S		
Local power, and transmission lines & gas pipeline													
Clearing	S		S			S	S	S	S	S	S	S	
Construction of power and linear infrastructure	S		S			S	I	I	S	I	I	S	
Underground mine and tunnel													
Underground mine preparation	S	S	S		S				I			I	
Underground tunnel construction (boring)													

TABLE 23 SCOPING MATRIX (PRE-CONSTRUCTION & CONSTRUCTION – SOCIOECONOMIC AND HEALTH ENVIRONMENT)

	Economy and Employment				Land and Livelihoods		Labour and Working Conditions			Community Health, Safety and Security					Infrastructure and Services					Community Cohesion	
	Direct Local Employment	Indirect and Induced Employment and Procurement	Taxes and Royalties	Capacity Enhancement	Economic displacement and change in livelihood patterns	Restricted Access to provisional Ecosystem Services	Working Conditions and Rights (including contractors, subcontractors and supply chain)	Occupational Health and Safety	Increase in GBVH within the workforce	Health and Safety impacts due to unplanned events (e.g. road accidents, Project facility failure)	Decreased or restricted access to basic health and emergency medical services	Increase in Transmission of Infectious Diseases	Environmental Health (Community health impacts due to changes in air quality, noise)	Increase in public safety and security-related incidents	Impacts on Housing availability and affordability	Impacts on educational services and facilities	GBVH towards community members	Impacts on Water Supply and Sanitation	Improvements to local infrastructure (roads, energy)	Increased Pressure on Social Cohesion (influx, competition for resources and services)	Unmet Employment and Business Opportunity Expectations
Project Design and Site Preparation																					
Land Acquisition (temp. and perm.)					S	S															S
Land Clearance and internal road construction							S	S		S		S	I	I					P		
Worker recruitment and mobilisation (including procurement of goods and services)	p	P	P	P			S	S	S		S	S		S	S	S	S	S		S	S
Construction																					
Production facilities and infrastructure																					
Traffic on existing road infrastructure										S											
Ground works						S		S	S	S		S									
Worker and equipment mobilisation	P			P	P		S	S	S		S	S		S	S	S	S	S		S	S
Maintenance of construction camps/facilities									S		S				P	I		I			
Groundwater/Surface water extraction																		S		S	
Waste management																		I			
Access Roads																					
Ground works / Clearing					S	S		S				S	S								
Road construction						S		S		S			S						P		
Local power, and transmission lines & gas pipeline																					
Clearing					S	S		S				S	S								
Construction of power and transmission lines						S				S	S		S	S		S			P		

	Economy and Employment				Land and Livelihoods		Labour and Working Conditions			Community Health, Safety and Security					Infrastructure and Services					Community Cohesion	
	Direct Local Employment	Indirect and Induced Employment and Procurement	Taxes and Royalties	Capacity Enhancement	Economic displacement and change in livelihood patterns	Restricted Access to provisional Ecosystem Services	Working Conditions and Rights (including contractors, subcontractors and supply chain)	Occupational Health and Safety	Increase in GBVH within the workforce	Health and Safety impacts due to unplanned events (e.g. road accidents, Project facility failure)	Decreased or restricted access to basic health and emergency medical services	Increase in Transmission of Infectious Diseases	Environmental Health (Community health impacts due to changes in air quality, noise)	Increase in public safety and security-related incidents	Impacts on Housing availability and affordability	Impacts on educational services and facilities	GBVH towards community members	Impacts on Water Supply and Sanitation	Improvements to local infrastructure (roads, energy)	Increased Pressure on Social Cohesion (influx, competition for resources and services)	Unmet Employment and Business Opportunity Expectations
Underground work mine and tunnel																					
Underground mine preparation (tunnel construction)				P		S	S	S	S	S	S		S	S							

TABLE 24 SCOPING MATRIX (OPERATION – PHYSICAL AND BIOLOGICAL ENVIRONMENT)

	Physical Environment						Biological Environment						
	Air	Noise	Land and Waste		Water		Ecosystems & Habitats			Flora		Fauna	
	Pollutants, Particulate, Odour	Noise and Vibration	Geology and Soils	Soil Contamination	Hydrogeology	Hydrology	Relevant Habitats	Ecological Connectivity	Protected Areas / Internationally Recogn. Areas	Relevant *Taxa*	Invasive Sp.	Relevant *Taxa*	Invasive Sp.
Operation													
Underground mine and maintenance facilities, WSF, TSF													
Mine and tunnel dewatering					S	S	S		S	S		S	
Blasting operations	S	S				S			S			IS	
Ore extraction and transportation	S	S				S	I		S	I		IS	
Mine excavation	S	S			S	S			S			IS	
Processing Plant													
Ore stockpiling	S	S	S		S	S	S		S	I		S	
Processing and chemical use	S	S			S	S	I		IS	I		IS	
Chemical agent storage, transport and handling	I	S			S	S	I		I	I		I	
Water treatment						S	S		I	I		I	
Tailings and Clean Tailings													
Tailings storage Facility (Dry Stacking)	S	S	S		S	S	S	S	S	IS	I	S	
Water seepage and decant water management					S	S	S		IS	IS		IS	
Water treatment facilities							I		I				
Waste management													
Waste storage	S	S	S			S	S		I	I	I	S	I
Waste final disposal	S	S	S		S	S	I			I		I	I
Water supply and management													
Groundwater / surface water extraction					S	S	IS		IS	IS		IS	
Water distribution pipelines						S							
Sewage treatment facilities							IS		I	IS		IS	
Water discharge						S	S		S	S		S	
Sewage sludge removal						S	I		I			I	
Roads and maintenance, vehicle / vessel movements													
Road maintenance	I					S			I		I	I	
Plant maintenance, monitoring and repair	I					S			I			I	
Vehicle movements	S	S			S	S	I		IS	I	S	S	
Worker mobilization													
Worker mobilization	I	S							I	I	S	S	I
Worker accommodation and facilities	I	S					S			I	I	IS	I

TABLE 25 SCOPING MATRIX (OPERATION – SOCIOECONOMIC AND HEALTH ENVIRONMENT)

	Economy and Employment				Labour and Working Conditions			Community Health, Safety and Security					Infrastructure and Services					Community Cohesion	
	Direct Local Employment	Indirect and Induced Employment and Procurement	Taxes and Royalties	Capacity Enhancement	Working Conditions and Rights (including contractors, subcontractors and supply chain)	Occupational Health and Safety	Increase in GBVH within the workforce	Health and Safety impacts due to unplanned events (e.g. road accidents, Project facility failure)	Decreased or restricted access to basic health and emergency medical services	Increase in Transmission of Infectious Diseases	Environmental Health (Community health impacts due to changes in air quality, noise)	Increase in public safety and security-related incidents	Impacts on Housing availability and affordability	Impacts on educational services and facilities	GBVH towards community members	Impacts on Water Supply and Sanitation	Improvements to local infrastructure (roads, energy)	Increased Pressure on Social Cohesion (influx, competition for resources and services)	Unmet Employment and Business Opportunity Expectations
Operation																			
Underground mine and maintenance facilities, WTSF																			
Mine and tunnel dewatering					I	I													
Blasting operations					S	S		S	S		S								
Ore extraction and transportation					S	S		S			S								
Mine excavation					S	S		S	S										
Processing Plant																			
Ore stockpiling					S	S			S										
Processing and chemical use					S	S			S		S								
Chemical agent storage, transport and handling					S	S		S	S		S								
Water treatment											I								
Tailings and clean Tailings																			
Tailings storage Facility (Dry stacking)						S		S	S		S								
Water sewage and decant water management						S					S								
Water treatment facilities						S		S	S							S			
Waste management																			
Waste storage						I													
Waste final disposal						I		S			S								
Water supply and management																			
Groundwater / surface water extraction					I	S		S		S	S					S		S	
Water distribution pipelines																S			
Sewage treatment facilities						S		S	S	S	S					S			
Water discharge										S	S					S			

	Economy and Employment				Labour and Working Conditions			Community Health, Safety and Security					Infrastructure and Services					Community Cohesion	
	Direct Local Employment	Indirect and Induced Employment and Procurement	Taxes and Royalties	Capacity Enhancement	Working Conditions and Rights (including contractors, subcontractors and supply chain)	Occupational Health and Safety	Increase in GBVH within the workforce	Health and Safety impacts due to unplanned events (e.g. road accidents, Project facility failure)	Decreased or restricted access to basic health and emergency medical services	Increase in Transmission of Infectious Diseases	Environmental Health (Community health impacts due to changes in air quality, noise)	Increase in public safety and security-related incidents	Impacts on Housing availability and affordability	Impacts on educational services and facilities	GBVH towards community members	Impacts on Water Supply and Sanitation	Improvements to local infrastructure (roads, energy)	Increased Pressure on Social Cohesion (influx, competition for resources and services)	Unmet Employment and Business Opportunity Expectations
Sewage sludge removal						S					S								
Roads and maintenance, vehicle movements																			
Road maintenance						S		S									P		
Plant maintenance, monitoring and repair						S													
Vehicle movements (ore transport, tailings pulp transport, worker movements, offloading, …)						S		S			S								
Worker mobilization																			
Worker mobilization	P	P		P	S		S		S	S		S		S	S			S	S
Worker accommodation and facilities	P	P		P	S		S			S		S	S			S		S	
Commercial operation			P																S

8.6 ANNEX F. BASELINE INFORMATION USED FOR THE SCOPING REPORT

The following section describes the baseline data collected to date during the scoping phase, which covered the AoI of the Project.

8.6.1 PHYSICAL

8.6.1.1 OBJECTIVES AND OVERALL APPROACH

The Table 26 below highlights the approach and various data sources that were used to describe the physical baseline of the Project.

TABLE 26 SOURCES OF BASELINE DATA USED TO DESCRIBE THE PHYSICAL ENVIRONMENTAL COMPONENT

Receptor	Baseline data available
Climate	The following literature and publicly available data was used: • Climate Portal of Saxony - Klimaportal Sachsen - Klima - sachsen.de • Portrait of Zinnwald im Erzgebirge - Portrait Zinnwald-Georgenfeld • Climate data for Zinnwald (1991-2021) – Climate-data.org Zinnwald: Temperatur, Klimatabelle & Klimadiagramm
Climate Change	The following literature and publicly available data was used: • State Office for the Environment, Agriculture and Geology, 2022. Klima-Referenzdatensatz Sachsen 1961-2020. • Information on climate hazards in Saxony and Sub-regions - GFDRR, climate hazards in Saxony, Dresden Region https://thinkhazard.org/en/report/16560-germany-sachsen-dresden
GHG and Carbon Stock Analysis	The following literature and publicly available data was used: • CO_2 emissions by sector for Saxony - Ergebnisse des Datenabrufs – Länderarbeitskreis Energiebilanzen • State regulation on the requirements for the assessment of greenhouse gas emissions - Saxon Mining Authority, 2024. Unterrichtung über den Untersuchungsrahmen gemäß § 15 UVPG.
Air Quality	Desktop-based data from: • Air Quality data (O_3 and NO_2) from the German Environment Agency - Luftqualität | Umweltbundesamt • Air quality data (PM10, PM2.5, NO_2 and O_3) for 2022 from the German Environment Agency - Luftschadstoffbelastung in Deutschland
Noise	No information on baseline noise could be retrieved via the desktop analysis for the Project. It was checked whether the Project AoI is currently covered by Environmental Noise Directive 2002/49/EC which is not the case since it is not located in conurbations, close to main roads or main railway lines as well as in the vicinity of major airports. Also, the European Health Atlas by the European Environmental Agency (Check your place | EEHA - Health Atlas) was checked for baseline information on noise, however, no noise data could be retrieved. Site-specific noise field data has not yet been collected for the Project.
Surface Water Hydrology	The approach utilized a desktop review of existing literature and publicly available local (Saxony) datasets and information. The information sources used to inform the baseline include: • G.E.O.S. (2020). VITAMIN, Water and Mining in the Border area Zinnwald/Cinovec. • LUIS Sachsen - https://www.luis.sachsen.de/ • Zinnwald Lithium Draft Feasibility Study Site-specific surface water field data has not yet been collected for the Project.

Receptor	Baseline data available
Groundwater	The approach utilized a combination of extraction of relevant information from hydrogeological field investigations completed for the Project and desktop review of existing literature and publicly available local (Saxony) datasets and information. The information sources used to inform the baseline include: • G.E.O.S. (2020). VITAMIN, Water and Mining in the Border area Zinnwald/Cinovec • CSA Global (2023). Draft Groundwater Management Feasibility Study for the Cinovec Project, Czech Republic • LUIS Sachsen - https://www.luis.sachsen.de/ • Zinnwald Lithium Draft Feasibility Study • Fugro Germany Land GmbH (2024) Hydrogeologische Erkundung Lithiumabbau Zinnwald/Altenberg • Dresdner Grundwasserforschungszentrum e.V. (2024). Pumpversuche, Probenahme und Analytik Zinnwald/Lithium Projekt
Geology and Geomorphology	The information sources used to inform the baseline include: • Geological structure of Saxony - Geologie - sachsen.de • Geological Map - Geologische Karten - LUIS - Landwirtschaft- und Umweltinformationssystem für Geodaten - sachsen.de • Burisch, et al., In Review – Greisen-Hosted Lithium Resources of the Erzgebirge. • Snowden Optiro, June 2024 – Report for Zinnwald Lithium plc & Zinnwald Lithium GmbH. • Geological Report - Ingenieurbüro für Baugrund und Umwelt Pabst, 2024. A detailed overview of the geology of the Project is given in the Snowden Optiro report from 2024 for Zinnwald Lithium plc & Zinnwald Lithium GmbH. The Snowden Optiro Report also geive a mineral resources estimate for the Project. The data provided in the report by Snowden Optiro was used to provide a general overview of the geological units of the Project. Further details from this report will be used for the ESIA phase. Additionally, a geological report for the exploration tunnel in Altenberg has been developed by the engineering firm Baugrund und Umwelt Pabst in 2024. Seven percussion core boreholes and four mechanical drillings were carried out.
Soil	The information sources used to inform the baseline include: • Soil map of Saxony - Karte: Bodenkarte 1 : 50.000 - iDA • Geological Report - Ingenieurbüro für Baugrund und Umwelt Pabst, 2024. • Map of Radon-222 in Soil - Federal Office for Radiation Protection - GEOPORTAL | Bundesamt für Strahlenschutz
Landscape Topography	The information sources used to inform the baseline include: • Zinnwald Lithium Preliminary Feasibility Study. • Snowden Optiro, June 2024 – Report for Zinnwald Lithium plc & Zinnwald Lithium GmbH. Site-specific topography data has been collected in the Preliminary Feasibility Study for the Project.
Resources and Waste	No baseline data available at this stage.

8.6.1.2 FIELD DATA COLLECTION AND ANALYSIS

In the context of the PFS, the Project has either gathered this field data or is preparing the subsequent programs as part of the Detailed Feasibility Study:

Surface Water

A surface water monitoring programme has been developed and surface water monitoring network is currently being installed in the for the Zinnwald area. The surface water monitoring programme will include monitoring of surface water flows and quality.

The surface water monitoring network currently being installed does not include the surface water environment along the proposed underground tunnel and at processing facility/tailings site at Liebenau, as these are more recent developments in the mine plan which have materialised as a the (preferred) alternative option to the Bärenstein/Bielatal original option for the processing plant/TSF. The installation of a surface water monitoring network and field investigations for these additional areas are part of a planned site investigation programme in 2025.

The Direct AoI for water extends across the border into the Czech Republic. Agreement has been reached between Zinnwald Lithium and Geomet to collaborate on surface water field data and analysis. A hydrological field investigation was completed in the Cinovec area in 2022 including one-off measurements of flows in the Bystrice Stream and the Hranični Brook. The installation of a surface water monitoring network has been recommended for the Bystrice Stream and the Hranični Brook.

Gauging stations for continuous measurements of water levels and discharges are being installed in the Zinnwald-Georgenfeld area. Four surface water measuring points are being installed within the catchment area of the Heerwasser and the Aschergraben, and one location in the Neugraben catchment in the Georgenfelder Hochmoor area. Surface water monitoring points are also being installed within the historical mine workings in Zinnwald-Georgenfeld at the mouths of the Tiefer Bünau Stolln, Tiefer Hoffnung Gottes Stolln and Tiefer Hilfe Gottes Stolln. A measuring point is also being installed underground at the border weir, where the water is transferred from the Cínovec mine on the Czech side of the border to the Zinnwald mine on the German side of the border.

Preliminary locations for additional surface water monitoring points have been derived along the Liebenau access tunnel and at the processing facility/tailings site near Liebenau. These locations will be validated in the field and authorization obtained prior to installation of the monitoring locations.

The surface water monitoring programme will include monitoring of surface water flows and quality.

Groundwater

Hydrogeological field investigations for the Project were completed in 2023 and 2024. A total of eight (8) boreholes were drilled in the area of the proposed mine by the consulting firm Fugro Germany Land GmbH. Following completion of drilling, geophysical logging and packer testing was completed at each borehole. The boreholes were then completed as groundwater monitoring boreholes.

Hydraulic testing and water quality sampling was subsequently completed in the groundwater monitoring boreholes by the consulting firm Dresdner Grundwasserforschungszentrum e.V. Rising head tests were carried out at three shallow groundwater monitoring boreholes. Due to low flow rates encountered in the rest of the groundwater monitoring boreholes, short recovery

tests were attempted in the remaining five deep groundwater monitoring boreholes. The water level recovery at two locations was too slow to provide analysable data.

Representative groundwater samples were collected from seven groundwater monitoring boreholes by pumping using an MP1 pump or bailers (deep monitoring boreholes). The water quality samples were submitted to a laboratory for analysis.

The findings of the field investigations have been integrated directly into the baseline section of the scoping report (see section 5.1.6 in the Scoping Report).

The existing baseline field investigations did not cover the hydrogeology along the proposed underground tunnel and at processing facility/tailings site at Liebenau, as these are more recent developments in the mine plan which have materialised as a the (preferred) alternative option to the Bärenstein/Bielatal original option for the processing plant/TSF. Field investigations for these additional areas are part of a planned site investigation programme in 2025.

The Direct AoI for water extends across the border into the Czech Republic. Agreement has been reached between Zinnwald Lithium and Geomet to collaborate on groundwater field data and analysis. Hydrogeological field investigations were completed in the Cinovec area in 2021, 2022, 2023 and 2024. The hydrogeological investigations included monitoring of groundwater levels, hydraulic testing of existing groundwater boreholes, installation and hydraulic testing of additional groundwater boreholes.

Soil

The geological report for the exploration tunnel in Altenberg by the engineering firm Baugrund und Umwelt Pabst in 2024 has information on the soil types of the seven percussion core boreholes and four mechanical drillings that were carried out. This information is however very localized and does not cover the whole environmental AoI.

8.6.2 BIOLOGICAL

8.6.2.1 OBJECTIVES AND OVERALL APPROACH

The overall objective was to establish a preliminary baseline for the biological environment (biodiversity) that aligns with the main components of biodiversity and ecosystems, as per the international standards of EBRD (ERS6), which includes:

- Legally Protected Areas
- Other internationally recognized areas of biodiversity value
- Terrestrial and aquatic ecosystems and associated habitats
- Natural and modified habitats
- Critical Habitat
- Conservation-important species of flora (plants) and fauna (animals)
- Ecosystem services

The approach considered a combination of desktop analysis and the extraction of relevant information from the completed biodiversity baseline surveys for the Project (which covered relevant biotopes/habitats and species).

The desktop component included a review of existing literature and publicly available global, regional (European) and national/local (Germany, Saxony) biodiversity datasets and information, as well as analysis of aerial/satellite imagery in Geographical Information Systems (GIS).

Several biodiversity baseline surveys have already been conducted to date to inform the German permitting process or are in the process of being completed, and the information from those studies that have already been completed was also used to inform the baseline.

A summary of the information sources used to inform the baseline is already included in Annex 8.1.2, and has not been repeated here in detail, however a list summarizing the key sources of information is provided for each component of biodiversity considered is provided below in Table 27.

TABLE 27 SUMMARY OF BIODIVERSITY COMPONENTS CONSIDERED IN THE BASELINE AND RELEVANT SOURCES OF INFORMATION

Component of biodiversity considered in the baseline	Information / database	Source / Reference
Legally Protected Areas	European Environment Agency: Natura 2000 Viewer and Datahub (online)	https://natura2000.eea.europa.eu https://www.natura2000.sachsen.de (published 23 April 2024, last modified 11 November 2024)
Other internationally recognized areas of biodiversity value	Key Biodiversity Areas (KBA) database and web viewer (online)	https://www.keybiodiversityareas.org
	BirdLife International Data Zone: knowledge hub for bird conservation (online)	https://datazone.birdlife.org
	Ramsar (wetland) sites database and web viewer (online)	https://rsis.ramsar.org
	UNESCO World Heritage Sites Database (online)	https://whc.unesco.org/en/list/
Terrestrial and Aquatic Ecosystems and Habitats	Scoping assessment for habitat, flora and faunal assessments for Zinnwald completed in 2022	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung [English translation: 'Zinnwald Lithium mine: Scoping Document']. Date: 04.11.2022
	LUIS Sachsen	https://www.luis.sachsen.de/fachbereich-natur.html
	Specialist habitat mapping and flora assessment for Zinnwald and Bärenstein/Bielatal completed in 2023	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung [English translation: 'Zinnwald Lithium mine: Results of biotope type mapping/surveys']. Date: 21.11.2023
Critical Habitat	A rapid/high-level screening was undertaken by applying the Critical Habitat qualifying criteria of EBRD PR6 and IFC PS6 to the Project, specifically as these relate to threatened/protected habitats and species. Information on habitats and species from the baseline was screened in accordance with these criteria to provide an initial indication of the potential for the Project area and AoI to support Critical Habitat.	
Species (flora and fauna)	International Union for Conservation of Nature (IUCN) Threatened Species Database (online)	https://www.iucn.org (version 2024/2)
	Specialist habitat mapping and flora assessment for Zinnwald and Bärenstein/Bielatal completed in 2023	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung [English translation: 'Zinnwald Lithium mine: Results of biotope type mapping/surveys']. Date: 21.11.2023
	Specialist faunal species surveys for Zinnwald, Bärenstein/Bielatal and Altenberg completed in 2023	Schulz UmweltPlanung (2023). Aufsuchung und Erschließung der Lithiumlagerstätte Zinnwald: Zwischenbericht zur faunistischen Kartierung der geplanten Betriebsanlagen in

Component of biodiversity considered in the baseline	Information / database	Source / Reference
		Zinnwald, Altenberg und Bärenstein [English translation: 'Exploration and development of the Zinnwald lithium deposit: Interim report on faunal mapping/surveys for the planned operating facilities in Zinnwald, Alternberg and Bärenstein']. Date: 21.06.2023
	Species recordings and potential presence assessment for 2023	Schulz UmweltPlanung (2023). Dokumentation der Arterfassungen [English translation: 'Documentation of species recordings']. Date: 20.10.2023
	Specialist flora/fauna species surveys for Zinnwald (mine exploration tunnel site at the former border station completed in 2024	Schulz UmweltPlanung (2024). Arterfassungen am Explorationsstollen Standort Alte Zollgrenzanlage: Dokumentation der Arterfassungen [English translation: 'Species surveys at the exploration tunnel location of the Old Customs Border Station/Facility: documentation of species recordings']. Date: 16.09.2024
Ecosystem services	Relied on interpretation of ecosystem, habitat and species information based on a combination of the above information sources.	

8.6.2.2 FIELD DATA COLLECTION AND ANALYSIS

Field surveys to map biotopes (habitats) and survey protected species of flora and fauna were undertaken for the Project by the local consulting firm, Schulz UmweltPlanung, during 2022, 2023 and 2024.

Biotope mapping (the equivalent of habitat surveys and mapping) was undertaken for the now discounted Bärenstein/Bielatal processing plant/TSF option and the mine exploration areas near Zinnwald in 2022-2023 by the local consultants, with the findings contained in the report by Schulz UmweltPlanung (2023). For the exploration tunnel location at the former border facility, detailed biotope mapping was not undertaken, however the habitats/biotopes are discussed in general in the report for this site (Schulz UmweltPlanung, 2024).

Specialist baseline flora and fauna surveys covering protected species predicted to occur have been carried out for selected components of the Project in 2023 and 2024, informed by initial scoping study done in 2022 by Schulz UmweltPlanung, which determined the focal areas and faunal groups to be considered as part of these baseline surveys. The focus of these surveys was on breeding birds, mammals (including bats) and herpetofauna (reptiles and amphibians). In addition, incidental records of other important features (flora and insects for example) were included in the survey reporting where relevant but did not form part of the formal/focused sampling efforts.

Table 28 provides a summary overview of the details of the relevant biodiversity/biological baseline surveys conducted thus far for the Project. The approach and methodologies used align with those accepted in terms of the national permitting process in Germany.

Note that the findings of the surveys have not been considered here in detail, and rather these are integrated directly into the baseline section of the scoping report (see section 5 of the Scoping Report) and the Scoping Biodiversity Baseline Report.

TABLE 28 SUMMARY OF BIODIVERSITY/BIOLOGICAL BASELINE SURVEYS COMPLETED FOR THE PROJECT IN 2023/24

Survey	Location / Survey Area	Scope	Methodology Applied	Report Reference
Biotope (habitat) mapping for the Zinnwald mine	Processing plant/TSF: Bärenstein/Bielatal Mine site: Zinnwald	Biotope (habitat) surveys and mapping in accordance with national biotopes classification and EU Habitats Directive types. Consideration of Protected areas.	• Surveys and mapping followed the biotope mapping key and guidelines for the state of Saxony - LfUG (2004)[195] in order to document current habitat features, complete the mapping of specially protected biotope types (for Germany/Saxony) and to map habitat types in accordance with the FFH Directive (align with EU Habitats Directive). • This relied firstly on a review of current aerial photographs and data on protected biotopes (from first and open land biotope mapping). • This was supplemented by site visits and visual habitat surveys to describe the habitats and confirm the mapping/boundaries and document floral species composition (including protected flora), which were carried out between September – October 2022 (covering the relevant summer/autumn season).	Schulz UmweltPlanung (2023). Bergwerk Zinnwald Lithium: Ergebnisse der Biotoptypenkartierung [English translation: '*Zinnwald Lithium mine: Results of biotope type mapping/surveys'*]. Date: 21.11.2023
Protected fauna species surveys for the Zinnwald mine	Processing plant/TSF: Bärenstein/Bielatal Mine site: Altenberg, Zinnwald	Specialist surveys of the following faunal groups: mammals, bats, reptiles, amphibians, birds. Consideration of Protected areas.	• Surveys were conducted following the national guidelines of Albrecht et al. (2014)[196]. • Bats: Acoustic nocturnal transect surveys on eight transects between June and September 2023 (summer season) using a handheld ultrasound/bat detector (Pettersson D1000X). Transects were chosen according to guiding structures, potential roosting areas and hunting habitats. Stationary detectors were also installed and sampled at five representative/suitable habitat sites. Bat calls were analysed using the Kaleidoscope software program to determine species. Detailed bat surveys at the Altenberg site were carried out in 2020, and a repeat survey was not considered necessary. • Birds: Methodology according to Südbeck et al. (2005)[197] covering representative habitats in the study area. Visual transect survey during day- and nighttime (using a thermal imaging camera) to also cover nocturnal species such as owls. In total 18 survey days were completed between April and August 2023 to cover the breeding season (spring, summer). Additional searches for tree hollows and nesting sites of large birds (raptors, storks etc.) in February and March 2023 (later winter, early spring). • Mammals (Hazel dormouse): Use of special nesting boxes or trapping tubes ("hazel dormouse tubes"), which were installed in potential wooded habitats (shrub and hedge structures, installed at approximately 1m height). Habitat suitability for sampling dormouse took into consideration projects from 2018 that considered habitat suitability for various species in the area, including dormouse. Sampling was carried out in summer/autumn 2023. Severn search areas were suitable for sampling and 70 sampling tubes were installed at the Bärenstein/Bielatal site, with Altenberg already studied in 2019 and 2020 and confirmed dormouse presence (not explored further in 2023). 10 tubes were sampled at the Zinnwald site in 2023. • Reptiles: Five visual transect surveys at the Bärenstein/Bielatal site in potential habitats between April and October, on warm, dry days, covering relevant habitat types. A targeted search of structure and hiding places was done. • Amphibians: 10 visual point surveys at suitable aquatic habitats including spawning waters (e.g. ponds, streams), including recording based on calls. The Bärenstein/Bielatal site, Altenberg and Zinnwald study areas/sites were all covered. These were conducted during the typical spawning period in May 2023 (spring).	Schulz UmweltPlanung (2023). Aufsuchung und Erschließung der Lithiumlagerstätte Zinnwald: Zwischenbericht zur faunistischen Kartierung der geplanten Betriebsanlagen in Zinnwald, Altenberg und Bärenstein [English translation: '*Exploration and development of the Zinnwald lithium deposit: Interim report on faunal mapping/surveys for the planned operating facilities in Zinnwald, Alternberg and Bärenstein'*]. Date: 21.06.2023
Protected fauna species surveys for the exploration tunnel	Exploration tunnel for the mine (at former customs border station/facility)	General description of habitat. Specialist surveys of the following faunal groups: mammals, bats, reptiles, amphibians, birds.	• Surveys were conducted following the national guidelines of Albrecht et al. (2014). • Bats: Acoustic transect surveys. Six surveys undertake between June and August 2024 (summer season) using a handheld ultrasound/bat detector (Pettersson D1000X). In addition, buildings were checked for bat activity/roosts using an infra-red camera. • Birds: Methodology according to Südbeck et al. (2005). Visual transect survey during day- and nighttime to also cover nocturnal species such as owls. In total seven breeding bird surveys completed between May and July 2023 (spring, summer seasons). • Mammals (Hazel dormouse): Use of trapping tubes in potential wooded habitats. • Reptiles: Visual transect surveys in potential habitats covering a period of three days. • Amphibians: Visual point surveys at suitable aquatic habitats (e.g. ponds) during the reptile survey.	Schulz UmweltPlanung (2024). Arterfassungen am Explorationsstollen Standort Alte Zollgrenzanlage: Dokumentation der Arterfassungen [English translation: '*Species surveys at the exploration tunnel location of the Old Customs Border Station/Facility: documentation of species recordings'*]. Date: 16.09.2024

[195] LFUG: Sächsisches Landesamt für Umwelt und Geologie (Hrsg.) (2004): Biotoptypenliste für Sachsen. Materialien zu Naturschutz und Landschaftspflege. Sächsische Druck und Verlagshaus AG, Dresden. 139 S. [English translation: '*Biotope type list for Saxony. Materials on nature conservation and landscape conservation.'*].
[196] Albrecht, K., T. Hör, F. W. Henning, G. Töpfer-Hofmann, & C. Grünfelder (2014): Leistungsbeschreibungen für faunistische Untersuchungen im Zusammenhang mit landschaftsplanerischen Fachbeiträgen und Artenschutzbeitrag. Forschungs- und Entwicklungsvorhaben FE 02.0332/2011/LRB im Auftrag des Bundesministeriums für Verkehr, Bau und Stadtentwicklung. Schlussbericht 2014. [English translation: '*Service descriptions for faunistic studies in connection with landscape planning contributions and species protection contributions. Research and development project FE 02.0332/2011/LRB on behalf of the Federal Ministry of Transport, Building and Urban Development*.']
[197] Südbeck, P., et al (Hrsg., 2005/2012): Methodenstandards zur Erfassung der Brutvögel Deutschlands. Radolfzell. [English translation: '*Methodological standards for recording breeding birds in Germany*'].

The existing baseline surveys have not covered the habitats/ecosystems/species associated with the underground tunnel and processing facility/tailings site near Liebenau, as these are more recent developments in the mine plan. These additional areas requiring surveys are part of a planned survey effort in 2025, with focused surveys in these areas according to the terms of reference and scope of work for biotope mapping and faunal surveys prepared by the Geologische Landesuntersuchung (GLU) Freiberg (Leistungsbeschreibung für Biotoptypenkartierung und faunistische Untersuchungen, dated 02.10.2024).

The focus of the surveys to take place during 2024-2025 will be on the Project area at the site of the processing plant and TSF near Liebenau. Further details on the survey plan for 2025 to cover these additional investigation areas is contained in Table 29. The studies have already commenced in the latter part of October 2024 and will continue through until October 2025.

TABLE 29 OVERVIEW OF ADDITIONAL BIODIVERSITY BASELINE SURVEYS PLANNED FOR OCTOBER 2024 – OCTOBER 2025

Survey	Location / Survey Area	Scope	Methodology Applied	Timing
Biotope (habitat) mapping	Processing plant at Liebenau: 108 ha site + 366 ha buffer area Geising: 5 ha site + 46 ha buffer area Müglitztal: 3 ha + 43 ha buffer area	Biotopes (habitats), specially protected biotopes in Germany/Saxony, flora species	• Will follow the biotope mapping key and guidelines for the state of Saxony - LfUG (2004) and state-owned enterprise Sachsenforst – forest biotope mapping (2013) and will include all protected biotope types in Germany/Saxony. • Includes mapping of habitat types according to the FFH Directive (i.e. Annex I of EU Habitats Directive) • Complete flora species inventory to be provided. • Description and indication of biotope values with conservation recommendations. • Age of woody plant stands to be provided.	Surveys are to be carried out between October 2024 – September 2025, with a key focus on the spring/summer season (March – September 2025)
Faunal surveys	Processing plant at Liebenau, Geising and Müglitztal Investigation areas for specific faunal groups: • Reptiles: 50 m • Amphibians: 500 m • Breeding birds: 500 m • Black stork, crane, raptors, eagle owl: 1000 m • Mammals (otter, bats): 200 m • Small mammals (dormouse, shrews): 100 m	Mammals, bats, breeding/migratory birds, reptiles, amphibians, invertebrates (terrestrial and aquatic)	• Methods will be applied for all taxa as described in Albrecht et al. (2014). • Invertebrates: to include and assessment of the species-rich damp grassland near this site. Includes butterflies, moths, dragonflies (for aquatic habits), aquatic invertebrates (macro-zoobenthos) and ground beetles • Amphibians: visual observations and recordings of calls, as well as use of bucket traps, at key spawning sites identified (aquatic habitat associated with waterbodies). • Reptiles: visual observations and transect inspections of potential hiding places and suitable habitats, including the installation of artificial shelters for sampling. • Birds: using indications of suitable habitats and search areas from the biotope mapping results, breeding bird surveys to be undertaken to record species and abundances, territory mapping through visual observations, calls and the use of sound decoys, according to the method of Südbeck et al. (2005), including search for large birds' nests and tree hollows. • Mammals: focus on wolf, otter, polecat, dormouse, shrews and bats in accordance with requirements in Germany, using visual transects and investigation of indirect evidence through signs/tracks of larger animals, camera traps, trapping tubes for Hazel dormouse, during all relevant seasons. • Bats: nocturnal acoustic transects using ultrasound detectors and static detectors for bats.	• Mammals: spring, summer, autumn and winter • Bats: spring to autumn (April – October) • Birds: March – July (spring and summer) • Reptiles: spring, summer and early autumn • Amphibians: spring and summer • Invertebrates: spring and summer, autumn

8.6.3 SOCIOECONOMIC AND HEALTH

Table 30 below summarizes the socioeconomic and health baseline data that has been collected during the scoping phase and indicates the administrative level at which data was found as well as data gaps that will need to be addressed during the ESIA baseline stage.

TABLE 30 SUMMARY OF SOCIOECONOMIC AND HEALTH DATA CONSIDERED IN THE SCOPING STAGE BASELINE AND INDICATION OF DATA GAPS TO BE COVERED IN THE ESIA

Topic	Sub-topics/indicators	Administrative level of data collected during the scoping phase	Missing data to be collected during the ESIA
Demographics	Absolute population	Germany and Saxony (National and State level) Czech Republic, Regional and district level	N/A
	Population composition by sex (male x female)	Saxony, all Direct AoI- districts, municipalities, cities/towns and some of the settlements within the Direct AoI Teplice district level	Settlement-level data for missing Direct Socioeconomic and Health AoI settlements
	Population composition by age	All municipalities within the Direct AoI	Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Population composition by religious affiliation, language spoken, ethnic origin Presence of vulnerable groups	Germany, Saxony and all municipalities within the Direct AoI Czech Republic	Settlement-level data for Direct Socioeconomic and Health AoI settlements
Household	Number of households	Saxony	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements 20 targeted household surveys focused on owners in Liebenau to collect socio-economic data, additional census information and livelihood information to feed the LAACP.
	Household composition (proportion of single and more-person households) Average household composition	Saxony	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Education	Enrolment rates by type of institution	Germany	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Enrolment Rates: Proportion of children enrolled in primary, secondary, and tertiary education. Gender Parity: Comparison of enrolment and attendance rates between male x female students. Completion Rates: Percentage of students completing primary, secondary, and higher education. Average Years of Schooling: Average number of years completed by the population. Higher Education Enrolment: Proportion of students pursuing higher education after secondary school, most common programs selected Availability of Transportation: Access to transportation services for students. Qualitative data on educational challenges/issues	All Direct AoI- municipalities Ústecký Region N/A	Educational attainment in the Direct AoI settlements Municipality/Settlement-level data for Direct AoI settlements
	Access to vocational Training: Access to skill development and vocational training programs. Access to programs connected to the mining sector	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Economy and Employment	GDP, GDP per capita, inflation rate Imports, exports, key economic sectors Comparison with EU HDI	Germany Czech Republic	N/A
	Regional GDP, Background of mining in the region	Saxony and all municipalities within the Direct Socioeconomic and Health AoI GDP for regional level in Czech Republic	N/A Recent data on the contribution of mining to (regional and national) GDP
	Employment rate (total and breakdown per gender) and adjusted unemployment rate Comparison with district, national and EU rates Key employing sectors	Germany, Saxony and all municipalities within the Direct Socioeconomic and Health AoI Czech Republic	Settlement-level data for Direct Socioeconomic and Health AoI settlements

Topic	Sub-topics/indicators	Administrative level of data collected during the scoping phase	Missing data to be collected during the ESIA
	National minimum wage Average minimum wage in the German mining sector	Germany	N/A
	Average local wage Average local wage per key sector Key economic sectors and local economic actors	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Gender pay gap Gender pay gap trend	Germany	Municipality/Settlement -level data for Direct Socioeconomic and Health AoI settlements
Livelihoods and Key Economic Sectors	Key economic sectors, economic actors and activities (incl. background, trends, and challenges)	Saxony and all municipalities within the Direct Socioeconomic and Health AoI Czech Republic	Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Gender roles in economic activities	N/A	Settlement-level data for Direct AoI settlements
Poverty	Poverty risk rates, deprivation rates or low work intensity rates Prevalence of poverty among social groups (per age, gender or household composition) Local disparities (if any)	Saxony	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Land Use and Ownership	Land tenure and use	Saxony Ústecký Region, Czech Republic	20 targeted household surveys focused on owners in Liebenau to collect socio-economic data, additional census information and livelihood information to feed the LAACP. Engagement with the agricultural cooperative to collect data to feed the assessment of displacement impacts
Community Health and Healthcare Facilities	Average life expectancy at birth (total, per gender) Leading cause of death Leading non-communicable diseases Leading communicable diseases Maternal mortality ratio Birth rate and trends Infant mortality rate Prevalence of mental health issues Prevalence of obesity, alcohol consumption, and illicit drug use	Germany Saxony and all municipalities in the Direct Socioeconomic and Health AoI Czech Republic	Settlement-level data for Direct Socioeconomic and Health AoI settlements: Main causes of morbidity and mortality (incluiding latest trends and insights on disease incidence) Accidents and injury rates and risk factors (including accident hot spots) Infectious disease profile Chronic disease profile Environmental health hazards Nutrition and food security Mental health and well-being Public safety Social determinants of health including aspects that are typically not well-documented (mental health disorders, suicide, crime, illicit activities, public safety, alcohol and drug use, etc.) Health services and infrastructure (access and quality as well as cultural health practice, barriers to achieving care) Emergency response Health concerns among communities in the Direct Socioeconomic and Health AoI over existing health conditions, over the Project and self-reported health status Opportunities for investment/improvement on health in the Direct Socioeconomic and Health AoI. Public safety and security profile (as above: suicide, crime, illicit activities, public safety)
	Average life expectancy at birth (total, per gender) Leading cause of death Population with disabilities Average age of disabled Proportion of elderly population receiving care assistance	Saxony and all municipalities in the Direct Socioeconomic and Health AoI	
	Overview of emergency rescue services Coverage, number of stations Access to services Overview of fire brigades, location, stations and members	All municipalities within the Direct Socioeconomic and Health AoI Ústecký Region, Czech Republic	
	Overview of health infrastructure (number and location of primary care, specialized services, dental services, clinics, etc.) Average distance to health facilities	Saxony and all municipalities within the Direct Socioeconomic and Health AoI Ústecký Region, Czech Republic	
Local Infrastructure and Public Services	Roads –Overview of main highways, primary and secondary roads serving the region	Saxony, and all municipalities and cities in the Direct Socioeconomic and Health AoI Ústecký Region, Czech Republic	Settlement-level data - Identify and map roads used to access the Project component sites Describe the existing road network to be used by the Project with focus on congestion, safety conditions, lighting, and signage

Topic	Sub-topics/indicators	Administrative level of data collected during the scoping phase	Missing data to be collected during the ESIA
	Public transport Overview of regional public transport operators Overview of connections to rail transport	Saxony, and all municipalities and cities in the Direct Socioeconomic and Health AoI Ústecký Region, Czech Republic	Overview of public transport options and schedules to reach the Project component sites Indicate any gaps or issues within the Direct AoI in public transport connection to the sites
	Air and Marine Transport Overview of connection to air transport Overview of connection to riverine/maritima transport	All municipalities and cities in the Direct Socioeconomic and Health AoI	N/A
	Water, Sanitation and Waste Management Overview of service providers % of population covered by services	Germany, Saxony Ústecký Region, Czech Republic	Overview of water, sanitation and waste management service providers in the Direct Socioeconomic and Health AoI Indicate any issues or challenges regarding water availability or quality in the Direct Socioeconomic and Health AoI Indicate any issues or challenges regarding water, sanitation and waste management in the Direct Socioeconomic and Health AoI
	Housing % of settlement area, % of residential area, profile of residential buildings, average housing area per resident Construction rate trends Housing market trends	Municipalities, comparison with Saxony indicators Ústecký Region, Cezchia	Settlement-level data – Overview of residential buildings, average housing area per resident, housing market trends
	Energy Overview of main energy sources Connection to national grid	Germany, Saxony and all municipalities within the Direct Socioeconomic and Health AoI	Any challenges and/or concerns regarding quality and availability of services in the Direct Socioeconomic and Health AoI
	Telecommunications Overview of internet providers Fiber optic coverage	All municipalities within the Direct Socioeconomic and Health AoI	Any challenges and/or concerns regarding quality and availability of services in the Direct Socioeconomic and Health AoI
	Leisure and recreation Overview of recreational and leisure facilities and initiatives	All municipalities within the Direct Socioeconomic and Health AoI	Any challenges and/or concerns regarding quality and availability of services in the Direct Socioeconomic and Health AoI
Community Safety and Security	Crime rates and trends	District and all municipalities within the Direct Socioeconomic and Health AoI Ústecký Region, Cezchia	Main types of crime in the Direct Socioeconomic and Health AoI Overview of private security service providers operating in the Direct Socioeconomic and Health AoI Particularities or challenges in terms of safety and security within the Direct Socioeconomic and Health AoI
Labour and working conditions	Common types of workers' rights violations in the mining industry	N/A	Data for Germany and Czech Republic / per industry
	Number of OHS accidents and trends from previous years Leading types of accidents Cases of workers' rights violations, types and regularity	N/A	Saxony, district, municipal or settlement-level data
Vulnerable Groups – National/Ethnic minorities	Proportion of foreign residents	Germany and Saxony Czech Republic	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Proportion of foreign residents break down per sex (male x female)	Cities (Altenberg and Bad Gottleuba-Berggießhübel)	N/A
	Population composition by ethnicity	Germany Czech Republic	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
	Percentage of languages spoken	Germany	Municipality/Settlement-level data for Direct AoI settlements
Vulnerable Groups – Asylum seekers and refugees	Number of asylum seekers and refugees in the region Country of origin and reasons for displacement	Germany and Saxony Czech Republic	Municipality/Settlement-level data for Direct AoI settlements
	Access to legal aid and support during the asylum process Employment rates and types of jobs held by asylum seekers and refugees Access to vocational training and skill development programs	N/A	Municipality/Settlement-level data for Direct AoI settlements

Topic	Sub-topics/indicators	Administrative level of data collected during the scoping phase	Missing data to be collected during the ESIA
	Sources of income and financial stability Levels of social inclusion, safety, discrimination, violence and interaction with the local community Availability of social support networks Government policies and frameworks supporting asylum seekers and refugees Qualitative data on refugee-specific vulnerabilities		
Vulnerable Groups - Women	Women's participation in political and decision-making processes Representation in leadership roles (e.g., government, business, community organizations)	Germany	Saxony, municipal or settlement level data Overview of any particular challenges to women political participation in the region
	Age distribution of women in the region Household composition (e.g., single mothers, multi-generational households) Employment rates among women Types of employment and income levels Access to financial services and credit Enrolment and completion rates in primary, secondary, and higher education Women's access to vocational training and skill development programs Incidence of gender-based violence (e.g., domestic violence, sexual harassment) and access to protection services (e.g., shelters, legal aid) Availability of support services for single mothers, widows, and elderly women Qualitative data on women-specific vulnerabilities	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Vulnerable Groups – Low-income households	Proportion of low-income households Average income in low-income households Qualitative data on low-income households specific vulnerabilities	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Vulnerable Groups – Children	Average number of children per houseful Poverty rates affecting households with children Average HDI for children population Proportion of children and youth in low-income households Prevalence of diseases or health conditions affecting children Dropout rates and reasons for dropping out Access to financial support programs (e.g., child benefits, welfare programs) Qualitative data on children-specific vulnerabilities	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Vulnerable Groups –Youth	Proportion of employed/unemployed young adults Youth outmigration rate/trends Qualitative data on youth-specific vulnerabilities	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements
Vulnerable Groups – Elderly	Proportion of elders in population/Population composition by age	All municipalities within the Direct Socioeconomic and Health AoI Regional level in the Czech Republic	Settlement-level data for missing Direct Socioeconomic and Health AoI settlements
	Average income of elderly population (compared to general average) Household composition (e.g., living alone, with family, or in care facilities) Disability rates and mobility issues	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements

Topic	Sub-topics/indicators	Administrative level of data collected during the scoping phase	Missing data to be collected during the ESIA
	Life expectancy and mortality rates Poverty rates among elderly individuals Sources of income (e.g., pensions, social security, family support) Employment status and opportunities for elderly workers Access to financial assistance programs Policies and programs for elder protection and support Qualitative data on elderly-specific vulnerabilities		
Vulnerable Groups – People with Disabilities (PwD)	Proportion of people with disabilities Most common types of disabilities Public and private initiatives to support integration of PwD Qualitative data on PwD-specific vulnerabilities	N/A	Municipality/Settlement-level data for Direct Socioeconomic and Health AoI settlements

8.6.4 CULTURAL HERITAGE

8.6.4.1 OBJECTIVES AND OVERALL APPROACH

The overall objective was to establish a preliminary baseline for cultural heritage.

A Desk-based review of available literature and publicly available satellite imagery, historic mapping, academic literature and previous Project- related cultural heritage studies consisting of the following documents:

- Draft minutes regarding the HIA of the World Heritage Site Montanregion Erzgebirge and Zinnwald-Lithium-Project, December 2023; and
- Proposed World Heritage Nomination Erzgebirge/Krušnohoří Mining Region Heritage Impact Assessment Scoping Report for the 'Zinnwald Lithium Project', April 2018.

8.6.4.2 FIELD DATA COLLECTION AND ANALYSIS

Site-specific cultural heritage field data has not yet been collected for the Project.

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